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Novell users face threat to security

By Caryn Gillooly
and Bob Brown
Network World Staff

PROVO, Utah — Novell, Inc. NetWare users are facing a major security threat that could also become a problem for users of other network operating systems.

A program developed by a university student in the Netherlands reportedly gives any user on a NetWare network the access rights of a local-area network supervisor, allowing the user to tap into any node in the net and roam freely through applications and confidential data on the server. Worse, the user could change the access rights of other users, keeping them out of the network, or shut down the entire LAN.

An initial version of the program was revealed several weeks ago at a meeting of the Dutch Novell User Group. In response, Novell last week released patches, or software enhancements, for NetWare 2.2, 3.11 and NetWare for Unix that were supposed to alleviate the problem.

However, sources said another program has been written to

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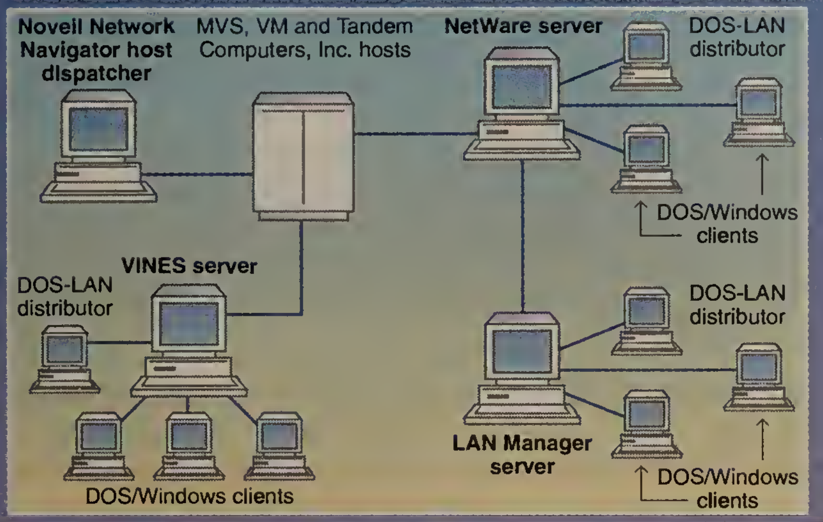
Novell adds software distribution options



Novell's Navigator DOS-LAN Distributor lets users employ either a mainframe or workstation to control software distribution and works with NetWare or any other LAN operating system (see story, page 2).

GRAPHIC BY SUSAN J. CHAMPENY SOURCE: NOVELL, INC., PROVO, UTAH

CASE expertise comes to client/server development

By Wayne Eckerson
Senior Editor

BOSTON — Two major CASE vendors last week forged links with Powersoft Corp. to help bring a measure of discipline and order to the freewheeling world of client/server applications.

LBMS, Inc. and Bachman Information Systems, Inc. announced interfaces between their computer-aided software engineering products and Powersoft's PowerBuilder development tool that will enable customers to apply CASE design, analysis and modeling techniques toward the development of graphically oriented client/server applications.

Users have been pushing vendors to integrate CASE and client/server development tools, such as PowerBuilder, so they can build mission-critical distributed applications using the same systematic approach they have employed to develop centralized

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Start-up targets FDDI speeds for Ethernet

Grand Junction's technology would support the venerable LAN at 100M bit/sec over UTP wiring.

By Caryn Gillooly
Senior Editor

UNION CITY, Calif. — Move over FDDI and ATM; here comes Fast Ethernet.

A start-up called Grand Junction Networks, Inc. last week said it is developing a 100M bit/sec version of Ethernet that works over unshielded twisted-pair cabling.

The company's Fast Ethernet would build on the IEEE 802.3 Ethernet standard and use the same packet formats as the current 10M bit/sec Ethernet. That means products based on the new scheme should be compatible with current Ethernet products and existing applications, and relatively inexpensive to boot, according to Jack Moses, vice-president of marketing for Grand Junction, based here.

"It will provide us with a low-cost solution that will make use of our existing wiring," said Bill Yundt, director of networking and communication systems at Stanford University in Stanford, Calif. "If they can pull this off, it will be a real boon for us."

According to Moses, the speci-

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NETWORLD DALLAS to host bevy of product introductions. Page 4.

NEWSPAPER

Microsoft plots move from desktop to the enterprise

By Timothy O'Brien
West Coast Bureau Chief

REDMOND, Wash. — At a strategy briefing here last week, Microsoft Corp. outlined its plans for adding work group functionality and enterprise extensions to its applications and Windows.

Microsoft also demonstrated new products and technologies, including Windows for Workgroups, Windows NT, a database query tool, enterprise system management tools and add-ons for existing products.

The briefing was Microsoft's latest attempt to convince the industry it is serious about making the shift from being a leading desktop software supplier to a strong player in the work group and corporate net arenas.

To do this, Microsoft is positioning its Windows operating system as an open, scalable platform supporting a wide range of network, data access and messaging applications and services.

By adding work group functionality to Windows, Microsoft is also providing a way to extend collaborative capabilities to desktop applications and enable development of a new generation of shared applications and services.

"Our strategy with Windows for Workgroups will be to provide the best of both worlds," said Bill Gates, chairman and chief executive officer of Microsoft. "We'll provide simple ad hoc work

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Europe axes voice service deregulation

By Ellen Messmer
Washington Correspondent

BRUSSELS, Belgium — The European Commission last week indefinitely shelved plans to further deregulate transmission services and open up voice telephony to competition in the European Community (EC).

U.K. OKs int'l switched voice resale. U.S. to follow? Page 4.

At its meeting here, DG13, the commission directorate responsible for telecommunications policy, pulled from its agenda a scheduled vote on a policy review that could have set the wheels of competition in motion for voice services.

Analysts said the delayed review appears to be a victim of the

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Users rail against proposed tax on network services

Decry IRS plan to extend current tax on local, long-haul voice to other communications services.

By Anita Taff
Washington Bureau Chief

WASHINGTON, D.C. — Eight major user groups and industry associations last week blasted the Internal Revenue Service for trying to breathe new life into a 100-year-old communications tax they say should have been buried long ago.

In July, the IRS issued a notice saying it plans to extend the 3% excise tax it currently levies on local and long-distance voice service to other services and possibly carrier transmission facilities. Although the IRS was not specific about what it might tax, any public network data or voice service, virtual network or enhanced service could be included.

The groups submitted a joint filing to the IRS opposing efforts to expand the excise tax. They said that taxing additional services would needlessly drive up prices and could damage competition in the industry.

Those opposing the IRS' efforts are: the Air Transport Association of America, Computer and Business Equipment Manufacturers Association, Electronic Industries Association, Information Industry Association, Infor-

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Novell unwraps software distribution product plan

Revamped Annatek tool is Phase 1 of 3-part plan.

By Caryn Gillooly
Senior Editor

PROVO, Utah — Novell, Inc. last week detailed its Electronic Software Distribution (ESD) strategy, a three-pronged plan for addressing users' software distribution woes.

The first phase of the ESD plan was the release of a network operating system-independent software distribution product that, in Phase 2, will be offered in a NetWare Loadable Module (NLM) version. Ultimately, Novell will incorporate the product into its NetWare Management System (NMS).

The release of ESD and the first product under the new strategy, dubbed Network Navigator DOS-LAN Distributor 2.0, comes only three months after Novell acquired Annatek Systems, Inc., a Boulder, Colo.-based company specializing in software distribution.

The new product, which is actually a rerelease of Annatek's flagship product, is a two-part software program that resides on the server and attached workstations (see graphic, page 1).

The product supports distribution, installation and mainte-

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Six int'l carriers agree to weave backup service web

By Bob Wallace
Senior Editor

NEW YORK — Six top international carriers last week signed a watershed agreement for pooling capacity on global fiber links to keep user networks up and running in the event of outages.

Under the Global Networking Project (GNP), AT&T, BT, France Telecom, Deutsche Bundespost Telekom, Australia's OTC, Ltd. and Japan's Kokusai Denshin Denwa Company, Ltd. will route overflow traffic or traffic from downed links over shared fiber capacity that is expected to become operational late next year.

Digital access and cross-connect systems (DACS) in each country will switch traffic from the carriers' domestic networks away from inoperable facilities to the GNP network for as long as necessary.

Carriers will use GNP to respond to short-term changes in traffic patterns resulting from circuit overloads, facility failures, natural disasters and geopolitical events, for example.

"We'll be able to reconfigure capacity on our submarine cables to restore international service in minutes, not hours," said Al

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Briefs

Network World database available. We are pleased to announce the availability of NetText, a database of *Network World* articles available either on floppy disk or on-line. The disk version for DOS-based microcomputers comes packaged with a version of Folio, Inc.'s Previews database engine and costs $129.95 for a one-year subscription with quarterly updates. The database dates from January 1991 and includes full text of all Buyer's Guides, trend analysis and news stories. For an additional $70, subscribers can receive articles dating back to January 1989.

The on-line version of NetText is available to users of DOS-, Windows- or Macintosh-based microcomputers over GE Information Services' International Network, said Jeff Pennett, director of information services and creator of NetText. The on-line start-up kit costs $25 and includes communications software and user manuals. The service costs $45 per hour and provides access to all articles published from January 1989 to the current date. To order either version of NetText, call (800) 643-4668.

HP gets its CICS. For the first time, users will be able to move IBM CICS applications to non-IBM equipment thanks to an agreement announced last week under which Hewlett-Packard Co. will sell and support the IBM transaction processing monitor for its HP 3000 and HP 9000 computers. The deal fulfills IBM's promise to port CICS to other vendors' platforms ("IBM opens up with new CICS, LAN tools," *NW,* Sept. 28). Like IBM's AIX version of CICS, HP CICS will be based on Open Software Foundation, Inc. distributed computing technology and the transaction processing services of Transarc Corp.'s Encina.

Whither ACE? Digital Equipment Corp.'s new president and chief executive, Robert Palmer, last week delivered a requiem for the Advanced Computing Environment consortium, of which DEC is a founding member. "We failed in execution as an industry to deliver an appropriate level of computing on schedule," Palmer said. "In this business, you can't be late. And unfortunately, relative to the ACE initiative, the hardware didn't show up in time to be competitive."

NEC takes the fast track. NEC America, Inc. will unveil this week a fast packet-based frame relay switch positioned as a springboard to local-area Asynchronous Transfer Mode cell switching. The switch, called the IX220, employs Reduced Instruction Set Computing processors to attain a performance of 168 million instructions per second. It supports frame relay and X.25 links at T-1 speeds, NEC said, and processes 60,000 frame relay frames per second and 28,000 X.25 packet/sec. The IX220 houses as many as 48 access ports and 48 trunk ports, has a backplane speed of 264M bit/sec and is priced from $17,000 to $83,000.

GSA leaves FTS 2000 as is. Having completed its fourth-year review of the Federal Telecommunications System (FTS) 2000 contract, the General Services Administration last week announced it has decided against shifting traffic between the two FTS 2000 carriers, AT&T and Sprint Corp. Carriers had to submit new, lower prices than those originally bid for the contract, which was awarded December 1988. The contract specified that if one bid was significantly higher than the other, the GSA would switch 40% of the higher priced carrier's traffic to the lower one. That would have dramatically changed the original 60/40 revenue split between AT&T and Sprint, respectively.

CONTACTS

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U.K. paves way to open int'l voice services market

By Bob Wallace
Senior Editor

LONDON — In a move that could foreshadow similar action in the U.S., a U.K. government unit last week approved plans to let foreign carriers resell switched voice services between the U.K. and Canada, Australia and Sweden.

Analysts predict that the Federal Communications Commission will follow suit this week by opening the U.S. market to participation in the new global competition in international voice services, giving net managers far more global networking options.

Last week's decision by the U.K. Department of Trade and Industry (DTI) will enable resellers to compete for the first time against U.K. monopoly carriers.

"This liberalization is a very significant step forward," said Edward Leigh, trade and technology minister with DTI. "It means there can now be fully competitive services to the switched services of established operators."

Analysts agreed and said other countries are likely to follow suit.

"This decision represents a fundamental change in the international switched services market," said Daniel Briere, president of TeleChoice, Inc., a Montclair, N.J., consultancy. "Throwing open the doors to resellers will mean competition and lower prices."

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IBM's CPI-C license fee now history

By Michael Cooney
Senior Editor

RESEARCH TRIANGLE PARK, N.C. — In an effort to boost market acceptance of its distributed networking strategies, IBM last week dropped the licensing fee for its Common Programming Interface for Communications (CPI-C).

The announcement knocks over a roadblock many software developers said impeded the interface's acceptance as an open application development standard. They also hope it indicates IBM is rethinking its Advanced Peer-to-Peer Networking (APPN) licensing practice.

CPI-C is a common IBM communications interface for systems running OS/2, OS/400, VM and MVS. As part of IBM's Systems Application Architecture, CPI-C provides the interface to underlying LU 6.2 peer-to-peer protocol services.

In a letter sent to CPI-C developers and obtained by *Network World,* Mitchell Wiggins, manager of IBM's Distributed Systems Architectures, stated, "IBM now grants permission to any party to implement the CPI-C interface and to describe the interface semantics in supporting publications without requiring a specific licensing agreement."

According to analysts, the CPI-C licensing fee was only $7,000 to $8,000, but neverthe-

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Artel, Kalpana intro E-net switches for work groups

By Skip MacAskill
Staff Writer

In a continuing assault on the bridge/router market, Artel Communications Corp. and Kalpana, Inc. last week separately rolled out multiport Ethernet switches designed for work groups with high-bandwidth requirements.

Positioned as an alternative to a multiport local bridge/router in a remote office environment, Artel's StarBridge Turbo and Kalpana's EPS-500 10Base-T Workgroup Accelerator both offer low latency and a per-port price less than $1,000.

Each of Turbo's eight ports supports an Ethernet segment. The device can bridge between segments at 60,000 packet/sec, the theoretical maximum wire speed of Ethernet, with a latency of 64 microsec.

A low-end addition to Artel's Galactica family of switching hubs, the Reduced Instruction Set Computing-based Turbo supports 10Base-T, 10Base2 and 10Base5 Ethernet as well as fiber-optic cabling.

The switch, which supports the Simple Network Management Protocol and Management Information Base (MIB) II, is protocol-independent and comes equipped with an autodiscovery

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Tool lets NetWare LANs share data over SNA links

Novell's NetWare SNA Links works with NetWare for SAA to route IPX packets across SNA links.

By Maureen Molloy
Senior Writer

SUNNYVALE, Calif. — Novell, Inc. last week announced software that will enable geographically dispersed NetWare local-area networks to share data over existing System Network Architecture backbones.

NetWare SNA Links is a NetWare Loadable Module (NLM) that works hand-in-hand with another NLM called NetWare for SAA to route Internetwork Packet Exchange (IPX) packets to other LANs across SNA links.

NetWare for SAA is a gateway that translates NetWare traffic into an IBM 3270 data stream to enable users to exchange data with IBM hosts. NetWare SNA Links goes a step further by adding an addressing function to enable the IPX packet to be transported to another NetWare LAN at a remote site.

NetWare SNA Links wraps the IPX packet into an SNA packet, enabling the host to read the packet and route it to its appropriate destination.

Traffic handling

"With the new software, the SNA backbone can be used not only to handle host traffic, but also to handle network traffic," said Bill Jeppesen, public relations manager for Novell's NetWare Systems Group, based here.

"NetWare SNA Links is a cost-effective way for us to leverage our existing SNA connections since it is entirely server-based and doesn't require any expensive host software," said Danny Thomas, a communications engineer at the State of Florida Division of Communications, a beta site for the product.

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Telcos to offer uniform set of transaction services

By Bob Brown
Senior Editor

SAN DIEGO — Nine local carriers last week announced plans for a nationwide rollout of services supporting point-of-sale and other transaction-oriented applications.

The carriers agreed to offer a uniform set of transaction switching and transport services (TSTS) offerings that can be accessed using either Integrated Services Digital Network, Feature Group B (950-XXXX) or data-over-voice (DOV) facilities.

User traffic will be fed into the carriers' packet switching networks and forwarded to an X.25-

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Vendors ready variety of new wares for NetWorld

Products to include PacBell's X.400 E-mail connection service, Andrew's frame relay bridge.

By Joanne Cummings
Senior Writer

DALLAS — Next week's NetWorld 92 Dallas conference will host a variety of product introductions, including the debut of an X.400-based LAN E-mail connection service from Pacific Bell and a frame relay bridge and LAN-to-minicomputer gateway software from Andrew Corp.

In addition, Calculus, Inc. and Integrated Workstations, Inc. (IWI) are expected to unveil fax servers, while Intelogic Trace, Inc. will announce a portfolio of local-area network diagnostic tools. (For pricing and availability information on these products, see the graphic on page 50.)

Pacific Bell Information Services Group's new LANmail Connection Service lets users of dissimilar LAN electronic mail packages, such as Novell, Inc.'s Message Handling Service (MHS), Lotus Development Corp.'s cc:Mail or Microsoft Corp.'s Microsoft Mail, exchange messages and files.

The dial-up service converts messages to the recipient's E-mail format and passes them along, enabling recipients to view and access them in their native formats.

As expected, Andrew will roll out PathWise/7622, a dual-port token-ring bridge that supports a frame relay interface for point-to-point connections ("New Andrew Corp. bridge to support frame relay," *NW,* Aug. 31).

The company will also unveil NetLynx Elite, software that runs on a Windows workstation configured as a gateway and links users on any Network Basic I/O System LAN to IBM's Application System/400 or System/3X minicomputer.

Andrew is also expected to introduce Bridge Manager Elite, which is software for an IBM Personal Computer AT or Personal System/2 that provides various bridge management functions, such as remote configuration, data collection and software download. The product works with any Andrew Bridgeport source routing token-ring bridge.

Calculus will be unveiling Version 3.6 of its EZ-Fax for Networks facsimile server. EZ-Fax in-

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Worth Noting

In 1991, the U.S. data service unit market totaled $196.4 million, according to market tracker Dataquest, Inc. of San Jose, Calif. Racal-Datacom, Inc. captured 21.5% of the market, followed by AT&T Paradyne with 20.3%, General Datacomm Industries, Inc. with 14.5% and Motorola Codex with 10.9%.

Data Packets

Systems Strategies, Inc. of New York has rolled out a new suite of client/server software products designed to link IBM Application System/400 and Unix computers. The Express for Unix-to-IBM AS/400 family comprises the Express 5250 for terminal emulation, Express APPN for networking Unix personal computers with the AS/400 and Express CPI-C, as well as the High Level Langauge Application Program Interface to aid in application development.

The firm also said its file-transfer software, Peer-To-Peer, will be ported to Unix from the AS/400 platform.

All products will ship by Oct. 31. Express server prices range between $2,000 and $8,000, while client software ranges from $250 to $400 and runs under Unix System V Release 4 or higher.

Telepartner International of Farmington, Conn., brought out a new version of its mainframe-based electronic software distribution product that can monitor and con-

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Unisys inks deal to license Wollongong's SNMP pack

Will develop own version of Management Station.

By Jim Duffy
Senior Editor

BLUE BELL, Pa. — Unisys Corp. and The Wollongong Group, Inc. have entered into a joint development and marketing arrangement whereby Unisys will offer users its own version of Wollongong's Management Station net management software.

Management Station runs on a Unix workstation and controls devices on a Transmission Control Protocol/Internet Protocol network. The software supports the Simple Network Management Protocol and allows other networked Unix hosts to share such management tasks as device discovery, polling, and trap and alarm receipt.

Under the joint development pact, the two companies added Unisys product-specific extensions to the Management Station software. Joint marketing will consist of Wollongong mentioning the Unisys arrangement in press releases and other documentation, according to Unisys.

Unisys currently offers the Common Network Management System (CNMS), a Unix-based package for managing systems and applications in a Unisys Distributed Communications Architecture (DCA) network. CNMS uses the Common Management Information Protocol.

Unisys is packaging CNMS and the Wollongong product, which Unisys calls CNMS Internet Manager, as a single management offering but will also sell them as separately priced products. CNMS and Internet Manager will reside on the same management station but will not be functionally integrated, said Bill Cocco, Unisys product marketing manager.

For example, users will be able to manage DCA and TCP/IP nets from a single screen but from two windows, with functional integration occurring over time, Cocco said.

Management Station's distributed management architecture facilitates manager-to-manager

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Consolidated monitoring pack keeps VTAM tuned

By Michael Cooney
Senior Editor

MINNEAPOLIS — Blueline Software, Inc. has unveiled a less expensive consolidated package of its network and mainframe performance monitoring software, including enhanced versions that let SNA users monitor multiple hosts from a single console.

Blueline's new Network Performance Powerpack is a cost-efficient packaged version of three existing Blueline products: Vital Signs for VTAM, VM and CICS. The products, which can also be purchased individually, help Systems Network Architecture users track and troubleshoot net performance problems before they interrupt net operations.

The Powerpack includes the Version 1.3 of Vital Signs for VTAM, Blueline's VTAM performance monitor. From a single console, Version 1.3 lets users monitor multiple VTAM hosts and token-ring local-area networks.

The VTAM monitoring software resides on the mainframe and can detect potential net performance problems, such as overfilled VTAM buffers, which would slow response times. Performance thresholds can also be set so if response times fall below acceptable levels, they are indicated in red on the monitor.

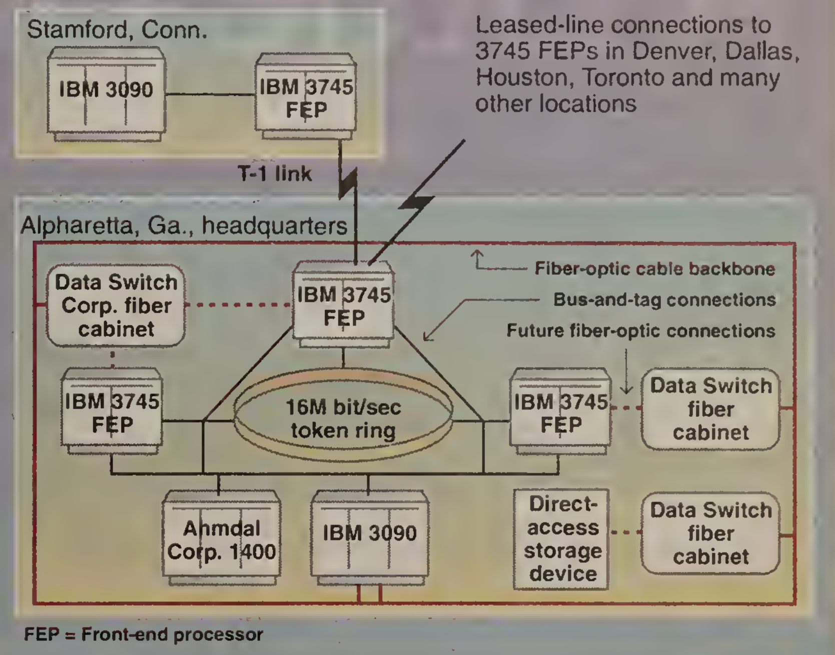
When an alert appears on the Blueline VTAM monitor, information about the problem is stored in a VSAM storage file on the mainframe database. Users can react to the problem immediately or use the information in the database for historical reports.

Alerts can also be sent to and monitored by IBM's NetView. NetView operators, however, cannot issue commands back to the Blueline system.

Monitoring response times on multiple hosts from a single console requires that Vital Signs for

(continued on page 16)

GECC goes fiber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16M bit/sec token ring
IBM 3745 FEP
Data Switch fiber cabinet
Ahmdal Corp. 1400
IBM 3090
Direct-access storage device
Data Switch fiber cabinet
FEP = Front-end processor

GECC expects its new fiber-optic backbone to improve net performance and help the firm centralize its net operations.

GRAPHIC BY SUSAN J. CHAMPENY

SOURCE: GENERAL ELECTRIC CREDIT CORP., ALPHARETTA

Credit firm looks to gain edge with fiber

Cuts over to fiber-optic net, consolidates data centers to save money, improve performance.

By Michael Cooney
Senior Editor

ALPHARETTA, Ga. — General Electric Credit Corp. (GECC) is burning the networking candle at both ends — consolidating data centers while moving the firm's headquarters data center to a fiber-optic backbone net.

By consolidating data centers and building a fiber backbone based on IBM's Enterprise System Connectivity (ESCON) mainframe channel architecture and Data Switch Corp.'s Fiber Management System (FMS), GECC hopes to save millions of dollars in new computer and networking equipment while improving performance for users.

GECC provides credit card authorizations and other financial services to retail stores such as R.H. Macy and Company, Inc.

The plan will save GECC money by eliminating the cost of supporting multiple data centers with their associated mainframes and net equipment. And the fiber backbone will let GECC add equipment without having to rip up its floors to lay down cable.

The company has already eliminated data centers here and in Raleigh, N.C., and is currently incorporating its Stamford, Conn., data center with its headquarters site here.

GECC's Systems Network Architecture-based net supports thousands of PCs and terminals, along with about 20 3745s at retail customer sites throughout the country, which are linked by leased lines to mainframes here. The mainframes support applications such as credit card approval and credit rating information.

"We want to consolidate all of our net operations under one roof," said Stuart Stern, manager of business recovery and technology at GECC. "We also wanted to add the increased network throughput that IBM's ESCON and a fiber net would provide."

ESCON is IBM's high-speed fiber-optic mainframe channel architecture. IBM expects ESCON technology to replace the bus-and-tag copper connections between mainframes and front-end processors (FEP), local cluster controllers and direct-access storage devices.

ESCON and the new fiber backbone will help GECC increase its current bus-and-tag channel speed of 4.5M byte/sec to ESCON's 10M byte/sec. Unlike bus and tag, each ESCON channel supports 72 channel-attached devices so additional channels and adapters will no longer be needed each time a new device is added.

(continued on page 16)

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Worth Noting

> "Bug-free software is an oxymoron."
>
> **Steve Meyer**
> President
> Avanti Technology
> Austin, Texas

Netnotes

Compex, Inc. next week at the Seventh Annual NetWorld Dallas show will roll out a suite of new personal computer-based network interface cards (NIC) for Ethernet and token-ring environments.

New to its Ethernet line are the 32-bit Extended Industry Standard Architecture (EISA) card, called the ENET32-EISA, and the 32-bit Micro Channel Architecture (MCA) card, called the ENET32-MCA.

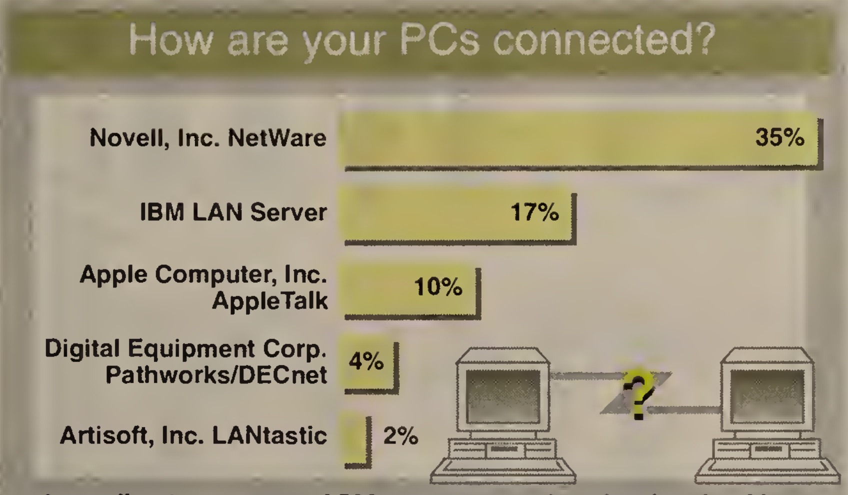
Both are based on National Semiconductor Corp.'s System-Oriented NIC chipset and feature 10Base2, 10Base5 and 10Base-T Ethernet connections.

Both cards will be available in November. The EISA card costs $579, and the MCA card costs $479.

The company will also introduce an Ethernet controller NIC that supports the emerging Personal Computer Memory Card International Association (PCMCIA) standard, which provides laptop computer users with desktop node speeds. The new ENET-MCIA card will be available this month and costs $375.

Additionally, Compex will unveil the ENET-P/16 Combo, which is a 16-bit automatic software configurable NIC that supports Novell, Inc. NE1000/NE2000 and Standard Microsystems Corp./Western Digital Corp. WD8003/WDPlus interface standards. The card will be available next month and is priced at $199.

For more details, contact Compex at (714) 630-7302.



How are your PCs connected?

According to a survey of 500 managers and professionals of large corporations from various industries surveyed, 68% have desktop systems that are connected to LANs.

GRAPHIC BY SUSAN J. CHAMPENEY SOURCE: BUSINESS RESEARCH GROUP, NEWTON, MASS.

IBM fills out server plan with two new PS/2 models

Releases redefine three-tiered server strategy.

By Caryn Gillooly
Senior Editor

NEW YORK — IBM has rolled out a new line of Personal System/2s, including two models the company said will redefine its three-tiered network server strategy.

IBM announced here the PS/2 Server 85, a traditional file and print server that will take over the low end of the three-tiered model, and the PS/2 Server 95, which will take over the middle tier. Filling in the high end, IBM reintroduced the Server 295, the machine it acquired from Parallan Computer, Inc., which now includes IBM drives and is ready to ship as an IBM server.

Climbing the server ladder

The new Server 85 models will come standard with a single Intel Corp. 33-MHz 486SX processor, eight 32-bit Micro Channel Architecture expansion slots, five storage bays, system-board memory expandable from 8M bytes to 64M bytes and up to 3.2G bytes of internal disk storage.

"This is our affordable server," said Dan Mayer, server product planning manager at the IBM Personal Computer Co., based in Somers, N.Y.

The next step up the server ladder is the new PS/2 Server 95 line, which IBM is positioning as high-availability and high-performance servers. These models have the same general configuration as the Server 85s, but come with two 25-MHz or 50-MHz 486DX2 system processors.

"The 50-MHz Server 95 has been balanced for heavy-duty LAN traffic," Mayer said. "You can load that guy up with network interface cards." Its dual processors enable the Server 95 to support as many as 200 users, he said.

Finally, the Server 295 is designed to meet the needs of users running mission-critical, fault-tolerant applications, IBM said. It can accommodate as many as eight processors, 128M bytes of main memory and 19.2G bytes of mass storage.

Three-tiered strategy

"Now we offer a range of server products, from an entry-point server to a top-of-the-line [machine]," Mayer said.

However, this announcement means changes to IBM's previously stated three-tiered strategy mapped out earlier this year ("IBM airs first server, details strategic plan," *NW,* May 4). Before the new Server 85s, IBM had been positioning its PS/2 Model 57 machines as low-end servers, with its existing PS/2 Model 95s as the middle tier and the Server 295s as the high end.

Although the Model 57s are "good all-around boxes," Mayer said the Server 85 is designed more specifically to be a server. For example, it has slots and bays similar to the Server 95, while the Model 57 configuration is more similar to that of IBM's desktop machines.

The PS/2 Server 85 models start at $4,165, and the PS/2 Server 95 models start at $6,815. Both are available now.

Proxim offerings up wireless LAN access

Company offers two adapters, new software to give wireless LAN users more room to roam.

By Caryn Gillooly
Senior Editor

MOUNTAIN VIEW, Calif. — Proxim, Inc. last week brought out two new adapters that offer wireless LAN connections to more types of personal computers along with new software that gives wireless LAN users more room to roam.

The new RangeLAN/Personal Computer Memory Card International Association (PCMCIA) and RangeLAN/Parallel adapters support wireless connections to any type of PC — be it a portable or desktop model — while Proxim's new Roaming-For-Range LAN software uses cellular technology to enable users to move about without losing their LAN link.

"Our theme is to extend your existing LAN without wires," said Rick Heller, president of Proxim, based here. All the new products work with existing Novell, Inc. NetWare LANs, he said.

The RangeLAN/PCMCIA is a credit card-sized adapter that fits into notebook, subnotebook, pen-based or palmtop computers. The card lets users of these smaller machines access servers that have Proxim's existing RangeLAN/Industry Standard Architecture (ISA) card installed.

RangeLAN/PCMCIA supports the PCMCIA standard, which means it will work with any portable machine. Previously, Proxim offered only its RangeLAN/LT adapter, which was designed specifically for Compaq Computer Corp. notebook computers.

"The PCMCIA cards will be a boon to everybody," said Nathan Smith, MIS coordinator at Buena Vista County Hospital in Buena

(continued on page 13)

Datapoint to introduce ArcnetPlus LAN over UTP

By Joanne Cummings
Senior Writer

DALLAS — Datapoint Corp. will unveil at next week's NetWorld 92 Dallas show here an unshielded twisted-pair version of its ArcnetPlus LAN as well as new net management features.

The products will enable users running the older 2.5M bit/sec Arcnet over unshielded twisted pair to upgrade to the 20M bit/sec ArcnetPlus and to better manage the physical connections to the local-area network, the company said. Previously, ArcnetPlus could only work over traditional coaxial cable.

The new products include ArcnetPlus UTP PC LAN Adapter and the 16-Port ArcnetPlus Hub. The adapter works with any IBM Personal Computer AT with an 8- or 16-bit Industry Standard Architecture bus and links the PC to the hub using unshielded twisted-pair wiring.

The hub has 14 unshielded twisted-pair ports and two ports supporting coaxial cabling, which enables the hubs to be interconnected.

The products support EIA/TIA 568 and IEEE 10Base-T standards, and let users be connected at distances up to 100 meters from the hub. As many as eight of the hubs can be daisy-chained together, and the coaxial connections support distances of 2,000 feet.

> Previously, ArcnetPlus could only work over traditional coaxial cable.
>
> ▲▲▲

The new adapters will also come bundled with software that enables any workstation on the LAN to be configured as a net

(continued on page 13)

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NetWorth's Series 4000 Intelligent Hub provides manageable connectivity for departmental Ethernet networks. Recently, NetWorth announced its exclusive NetWare Application Engine, providing a brand new method for centralizing NetWare communications services right in the hub.

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Proxim offerings up wireless LAN access

continued from page 11

Vista, Calif., a current user of Proxim's ISA adapters. "If you can have a wireless connection with a credit-card sized adapter, there won't be anybody that won't be able to connect to the network."

Similarly, Proxim's other new adapter provides wireless LAN access for any desktop machine. RangeLAN/Parallel is an external wireless LAN adapter that attaches to a computer's parallel port, meaning even computers with no available slots can gain wireless access to a RangeLAN/ISA-based machine.

Roaming-For-Range LAN software, meanwhile, works in conjunction with the company's adapters to give users additional mobility. It resides within any laptop or portable machine and enables the machine's user to move from one RangeLAN/ISA-based LAN server to another without losing the LAN connection.

> Roaming-For-Range LAN software works in conjunction with the company's adapters to give users additional mobility. It resides within any laptop or portable machine.
>
> ▲▲▲

Roaming-For-Range LAN works by using cellular technology. As the user carries the computer from one cell to another, the software automatically seeks and finds the next adjacent cell and makes the connection to the new server. The new server then forges a link to the first server, via a wired or wireless connection, allowing the user to maintain a logical connection with the same server at all times.

Buena Vista Hospital's Smith said he is particularly interested in Roaming-For-Range LAN.

"The cellular technology products would be perfect for us," he said, explaining that doctors could roam throughout the hospital with palmtop computers, for example, and never have to worry about losing connection to the network or about being too far away from a particular server.

The products will be available in December. RangeLAN/Parallel and RangeLAN/PCMCIA will cost $595, and Roaming-For-Range LAN costs $99 per node. ◻

Datapoint to intro ArcnetPlus over UTP

continued from page 11

management console. The software supports the collection of low-level management information from adapters on other LAN-attached workstations, including the LAN adapter and driver revision, adapter traffic statistics, network error types and frequency, and signal and line quality.

Datapoint is also expected to unveil a new starter kit, called the ArcnetPlus Test Drive Kit, designed to let users try the new LAN for free before upgrading their entire installation. The kit includes two ArcnetPlus LAN adapters and one five-port hub, which is offered only as part of the kit.

"This enables users to measure how the switch to ArcnetPlus will enhance their network performance," said Robert Hollingsworth, director of marketing at Datapoint.

Pricing for the new products was unavailable at press time, but Hollingsworth said they would be priced significantly lower than the current ArcnetPlus products. ◻

Data Packets

continued from page 9

trol software deliveries to local-area network workstations.

Telepartner's Synchrony software distribution package disburses software updates to LAN servers, which then deliver them to attached workstations. Version 2.3, which debuted last week, sends distribution reports from LAN servers to the IBM mainframe, where they can be accessed by a net administrator at a central site.

Previously, Synchrony could deliver software updates to LAN servers but could not monitor distribution to attached workstations, Telepartner said. Also, Version 2.3 does not require a LAN-attached workstation to log on to the mainframe as a 3270 terminal in order to receive software updates.

Synchrony Version 2.3 includes LAN server and LAN client components. They are priced at $1,000 and $95, respectively. A usage-based fee for the mainframe software starts at $10,000. The new version will be available later this month. ◻

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Firm looks to gain with fiber

continued from page 9

Stern said the company decided to go with a fiber backbone when it realized its current configuration would not be able to support the net's expected 40% growth per year.

"As we bring more equipment on-line, ESCON will also provide us with easier configuration features," Stern said. In the past, devices linked via bus-and-tag cables had to have their communications paths precisely defined to the mainframe and had to be located near the mainframe.

Devices linked via ESCON need paths defined to the ESCON Director, which will provide data links to newly added devices, Stern said. ESCON Directors are intelligent fiber controllers that provide dynamic switching among attached devices.

A new service from Data Switch Corp., a fiber channel extension provider based in Shelton, Conn., has been a big help to GECC as it builds its fiber backbone. Under its FMS service, Data Switch is providing installation and maintenance of fiber-optic cable and equipment throughout GECC's building.

Key to the service is the installation of Central and Zone Configuration Cabinets that bring the fiber to the data center floor. The cabinets, located throughout the data center, contain fiber plugs or ports similar to telephone jacks for linking equipment directly into the fiber backbone.

"Data Switch's service saved us 30% to 40% of our total cost because they came in, designed, planned and implemented the routing configurations before we laid down any fiber," Stern said.

He declined to put an exact figure on how much GECC will ultimately save by deploying its new backbone, although he offered some warnings for other users looking into fiber.

"Users have to realize and plan for the cost of fiber on the mainframe. For example, bus-and-tag cables automatically came with the mainframe — fiber doesn't," Stern said. "That can be an expensive surprise for someone who hasn't budgeted for it."

For now, Stern has only his mainframes and some storage facilities connected to the fiber backbone. In the near future, he said his FEPs, peripheral products such as external disk drives, and other network gear will all be linked to the backbone.

Unisys inks deal with Wollongong

continued from page 9

communications, whereby management consoles share data on the devices they govern, Wollongong said. Currently, SNMP supports manager-to-agent communications, which means a console can only share information with the devices it manages.

Distributing management processes among Unix servers reduces traffic because one console is not responsible for polling the entire enterprise network, according to Wollongong. It also provides redundancy because multiple servers are engaged in the management process.

Until now, lack of an SNMP offering was "probably a gaping hole" in the Unisys product line, said analyst David Passmore of Gartner Group, Inc. in Stamford, Conn. But Unisys' selection of the Wollongong platform to fill that hole is a mistake, he said.

"I would've gone with one of the platforms attracting more interest among application developers" such as Sun Microsystems, Inc.'s SunNet Manager or Hewlett-Packard Co.'s OpenView, Passmore said. "There's going to be a shakeout, where only a handful will survive and everybody else will be writing applications [to those platforms]. I don't believe the Wollongong platform will be one of the survivors."

According to Cocco, Unisys evaluated several SNMP management products, including NetLabs, Inc.'s NetLabs/Manager platform, and settled on Wollongong's product because of its distributed architecture and application generation capabilities.

The CNMS Internet Manager is available now on the Unisys U 6000 line of Intel Corp. i486-based Unix systems. Prices start at $25,000.

Separately, Wollongong said Bell Atlantic Network Services, Inc. of Arlington, Va., purchased Management Station to manage its 20,000-node TCP/IP net.

Pack keeps VTAM tuned

continued from page 9

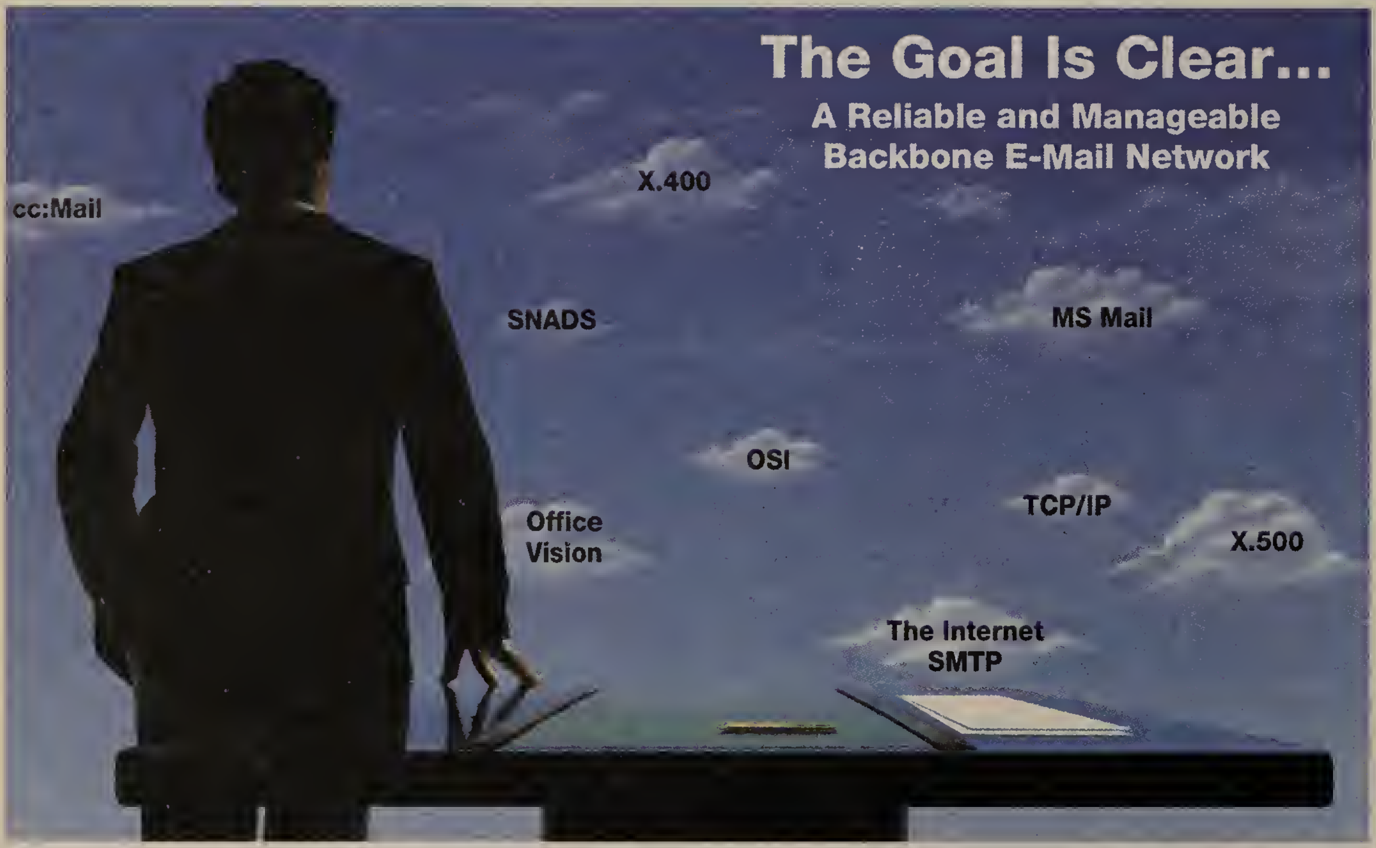
VTAM software modules reside on each VTAM host being monitored. The modules report data to a user-defined central monitor. VTAM programmers can then fix a problem in minutes, where it could have taken hours or days in the past, users said.

"We use the Blueline to keep VTAM well-tuned because our network has to be running smoothly seven days a week," said Virginia Kurasch, systems programming manager for the Saint Paul Federal Bank in Chicago, which uses all three components of the Powerpak offering. Kurasch said that before the bank used Blueline to monitor VTAM performance, she couldn't tell if problems were being caused by the network or the mainframe.

She said the Blueline Powerpak monitors would be more useful if they presented their data on one central graphical screen, rather than on the three separate monitors now required for VTAM, VM and CICS.

William Cecchi, president and chief executive officer of Blueline, said the firm was aware of this issue and would be working to develop a centralized monitor but gave no time frame for its availability.

Powerpak costs $22,460. Individually, Vital Signs for VTAM costs $9,680, Vital Signs for CICS costs $7,750 and Vital Signs for VM costs $10,648.



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INTERNETWORKS

LAN-TO-LAN AND LAN-TO-WAN EQUIPMENT AND STRATEGIES

Worth Noting

"Many users are attracted to the idea of consolidating their SNA traffic onto router backbones. But between [CrossComm] and Cisco, there are only about 15 large users that are actually doing it right now."

Tad Witkowicz
President
CrossComm Corp.
Marlborough, Mass.

Link Notes

CrossComm Corp. last week announced the availability of its new routing algorithm, based on the Shortest Path First family of routing algorithms, that is intended to improve load balancing for IBM Systems Network Architecture and other traffic in token-ring internetworks. It further enhances the ability of the vendor's ILAN bridge/router to route around failed links ("ILAN's new algorithm is boon to SNA," *NW,* Nov. 11, 1991).

As expected, **SynOptics Communications, Inc.** this week will unveil its LattisHub family of stackable 10Base-T hubs for work group environments. As many as five LattisHub devices can be stacked together to support up to 80 end nodes. They are available now and range in price from $1,295 to $3,195, depending on configuration.

LattisLink, an unmanaged 16-port 10Base-T hub for remote offices, will also be unveiled. It will be available this month for $995.

Version 2.0 of Lattis EZ-View, which will now support Novell, Inc. Internetwork Packet Exchange (IPX), will ship in November for $695. ◼

HP introduces frame relay routers and OSF DME pack

Routers link remote sites to high-speed WANs.

By Maureen Molloy
Senior Writer

PALO ALTO, Calif. — Hewlett-Packard Co. last week introduced a family of low-end multiprotocol bridge/routers that support a variety of wide-area network services for linking remote sites to a corporate internet.

The company also introduced HP OpenView Interconnect Lite, a Unix-based network management system that is one of the first to support the Open Software Foundation, Inc.'s Distributed Management Environment (DME). DME support simplifies the integration of multivendor management applications.

The two-port HP Router/SR 27288A and the four-port HP Router/FR 27289A bridge/routers connect at speeds up to T-1 to wide-area services, such as X.25, frame relay, Switched Multimegabit Data Service and Integrated Services Digital Networks.

The bridge/routers also support the Point-to-Point Protocol, which makes them suitable for multivendor nets. They also support the Transmission Control Protocol/Internet Protocol, DECnet, Novell, Inc.'s Internetwork Packet Exchange (IPX), Xerox Corp.'s Xerox Network Systems and AppleTalk.

The HP Router/FR is one of lowest cost routers for users that need to link remote sites to high-speed switched WAN services but do not require many ports.

Two other recently introduced products — Cisco Systems, Inc.'s Cisco 3000 bridge/router and Proteon, Inc.'s DNX300m bridge/router — are comparably equipped ("Cisco unveils flashy lower end routers," *NW,* Aug. 10, and "Proteon bridge/router eases remote site deployment," *NW,* July 27).

A Quick-Config utility on the console port eases installation and configuration of the routers by guiding users through a series of questions. Like Proteon's

(continued on page 18)

ODS offers multivendor token-ring recovery feature

By Skip MacAskill
Staff Writer

RICHARDSON, Texas — Optical Data Systems, Inc. (ODS) has unveiled an automatic network recovery capability that will enable token-ring LANs to bounce back from failures in less than eight seconds.

The new feature, dubbed Network Protector, is supported by artificial intelligence-based software that works with the management agent on an ODS Series 290 intelligent hub.

Any 802.5-compliant device, such as a bridge, router or hub, on a token-ring local-area network connected to the ODS hub can take advantage of the vendor-independent recovery capability.

When a node begins to beacon on the ring, Network Protector detects the problem and isolates it at the multistation access (MAU) unit level so only that particular segment or work group on the ring will be affected.

ODS claims the feature can recover the ring in less than eight seconds after such a situation.

"We guarantee that Network Protector will have the problem detected and [the device with the faulty node] turned off 95% of the time," said Terry Gaston, ODS' vice-president of marketing. "It's amazing because we can turn it off in less time than a token-ring time-out occurs."

Other vendors offer recovery features that work within eight seconds, but those solutions are only guaranteed for devices on the ring from those particular vendors, according to Gaston.

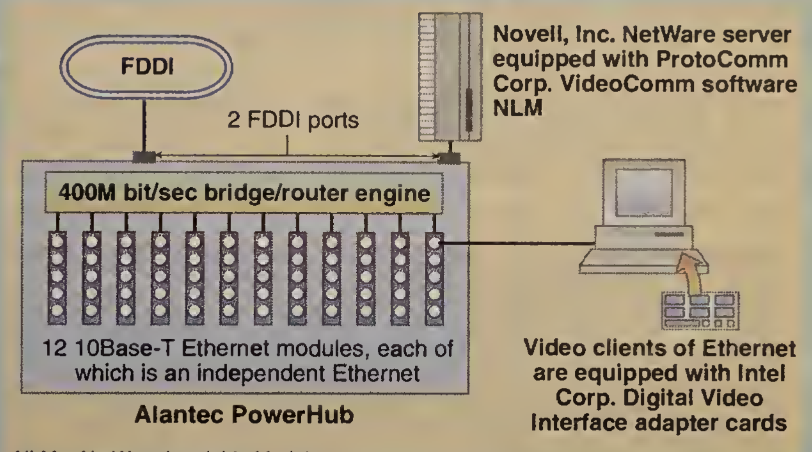
"Other vendors can't guarantee that their solutions will work if you introduce equipment onto the ring that isn't theirs," he said. "We can because our approach is vendor-independent."

Analysts said ODS' approach is a real advantage for the company.

"ODS has invested a lot of time, money and energy into this

(continued on page 18)

Vendors demo multimedia over Ethernet


FDDI
2 FDDI ports
Novell, Inc. NetWare server equipped with ProtoComm Corp. VideoComm software NLM
400M bit/sec bridge/router engine
12 10Base-T Ethernet modules, each of which is an independent Ethernet
Alantec PowerHub
Video clients of Ethernet are equipped with Intel Corp. Digital Video Interface adapter cards

NLM = NetWare Loadable Module

Wedding the PowerHub, which can deliver up to 10M bit/sec of private Ethernet to every client on the net, with existing products from 3 other vendors will enable users to support integrated voice, video and data applications over 10M bit/sec Ethernet LANs.

GRAPHIC BY SUSAN SLATER

Vendors will demo video over Ethernet

Firms at NetWorld will merge wares to support real-time multimedia applications over 10M bit/sec.

By Maureen Molloy
Senior Writer

DALLAS — Four vendors will team up at NetWorld 92 Dallas next week in an effort to demonstrate how full-motion video applications can be effectively supported on hub-based 10M bit/sec Ethernets.

Rather than wait on Asynchronous Transfer Mode (ATM) as the answer to users' local-area network-based multimedia requirements, the vendors are expected to provide a viable and cost-effective solution by marrying the capabilities of three available products with an Alantec router/hub.

In addition to the vendor's PowerHub, the demonstration will use a Novell, Inc. NetWare server equipped with video software from ProtoComm Corp. and a Digital Video Interface (DVI) adapter card from Intel Corp.

"Many people claim you can't run lots of full-motion videos over Ethernet, but that simply isn't true," said Yancy Lind, director of marketing at Alantec. "We will show that users can have next-generation applications running over their existing Ethernets."

Such applications include computer-based training programs as well as interactive video manuals. Video servers can also be used for future applications such as video electronic mail, Lind said.

In the demo, the PowerHub will be attached to the NetWare server, which will be equipped with ProtoComm's VideoComm software. It will concurrently provide dedicated, full 10M bit/sec links to client personal computers equipped with Intel DVI adapters (see graphic, this page).

The VideoComm software uses Intel's DVI video compression technology and works along with video applications to send full-motion video directly from a file server to a client without utilizing a client's disk storage.

The PowerHub integrates 10Base-T hubbing, multiport internetworking and Fiber Distributed Data Interface links to help users overcome the bandwidth crunch that results when interconnecting high-performance workstations running bandwidth-hungry applications such as video.

It has a 400M bit/sec backplane and supports as many as 12 10Base-T modules for as many as 76 workstation connections. Each module can dedicate Ethernet's full 10M bit/sec bandwidth to a single connection.

The PowerHub also comes with two optional 100M bit/sec modules, each of which can be configured to support a single- or dual-attached FDDI link, such as to a work group server running the VideoComm software.

Mark Everding, president of Dataseek, Inc., a database and

(continued on page 18)

Token-ring recovery offered by ODS

continued from page 17

innovative token-ring recovery solution,'' said Todd Dagres, director of data communications research and consulting at The Yankee Group, a Boston-based market research firm. "The ring shouldn't go down more than half a percentage point, and if it does, it's up in eight seconds.''

While the ODS approach can handle beaconing devices that are already on the ring, it cannot prevent a faulty node from gaining access to the ring like Bytex Corp.'s Beacon Guard and Star-Tek, Inc.'s Zero Delay Lockout offerings can.

Network Protector is available now. The price of an ODS 290 intelligent hub with the necessary recovery software starts at $8,865, depending on configuration.

A free software upgrade is available for existing ODS users with a 290 hub that has Simple Network Management Protocol software on-board. For existing ODS 290 hubs without SNMP, the recovery functionality can be added for $4,580. ◻

Vendors will demo video over Ethernet

continued from page 17

video systems supplier in Houston that uses the ProtoComm video software, said a number of his customers are interested in combining the four products to satisfy their expanding multimedia requirements.

One client that runs a fast-growing dating service is looking to integrate paper profiles of members with video profiles to make it easier for multiple members to simultaneously screen potential candidates. The database comprising each member's video profile is housed on the server and can be downloaded to terminals via the Ethernet hub.

"Previously, members had to sort through books and, when they saw someone [who interested them], look up a VHS video on that person and plop it into a VCR,'' Everding said. "With the new network, it's much more seamless because they can now get all the information they want from a single workstation.''

While next week's NetWorld demonstration should go a long way in highlighting the capabilities of transporting high-bandwidth applications across standard Ethernet LANs, other vendors are also working on multimedia strategies that rely on hub-based Ethernets.

LANNET Data Communications, Inc. this summer unveiled a similar solution for users' LAN-based multimedia requirements by combining the capabilities of its LET-36 intelligent hub and its newly enhanced 10Base-T modules with a specialized video server and network interface cards for client workstations.

The 10Base-T modules have been upgraded with special driver software that is tailored to support video. The interface cards are based on the DVI developed by IBM and Intel. The company has also enlisted the Mountain View, Calif.-based start-up Starlight Networks, Inc. to furnish the video server.

LANNET said that because of its pricing — $200 to $800 per port — and the fact that a user's installed base of Ethernet would be protected, many users would find this approach to multimedia networking more appealing than ATM. ◻

HP intros frame relay routers, DME pack

continued from page 17

DNX300m, HP said the router can be installed and configured in less than 15 minutes.

The bridge/routers are equipped with Flash erasable programmable read-only memory to enable the user to remotely configure and manage the devices from any Simple Network Management Protocol-compliant network management system.

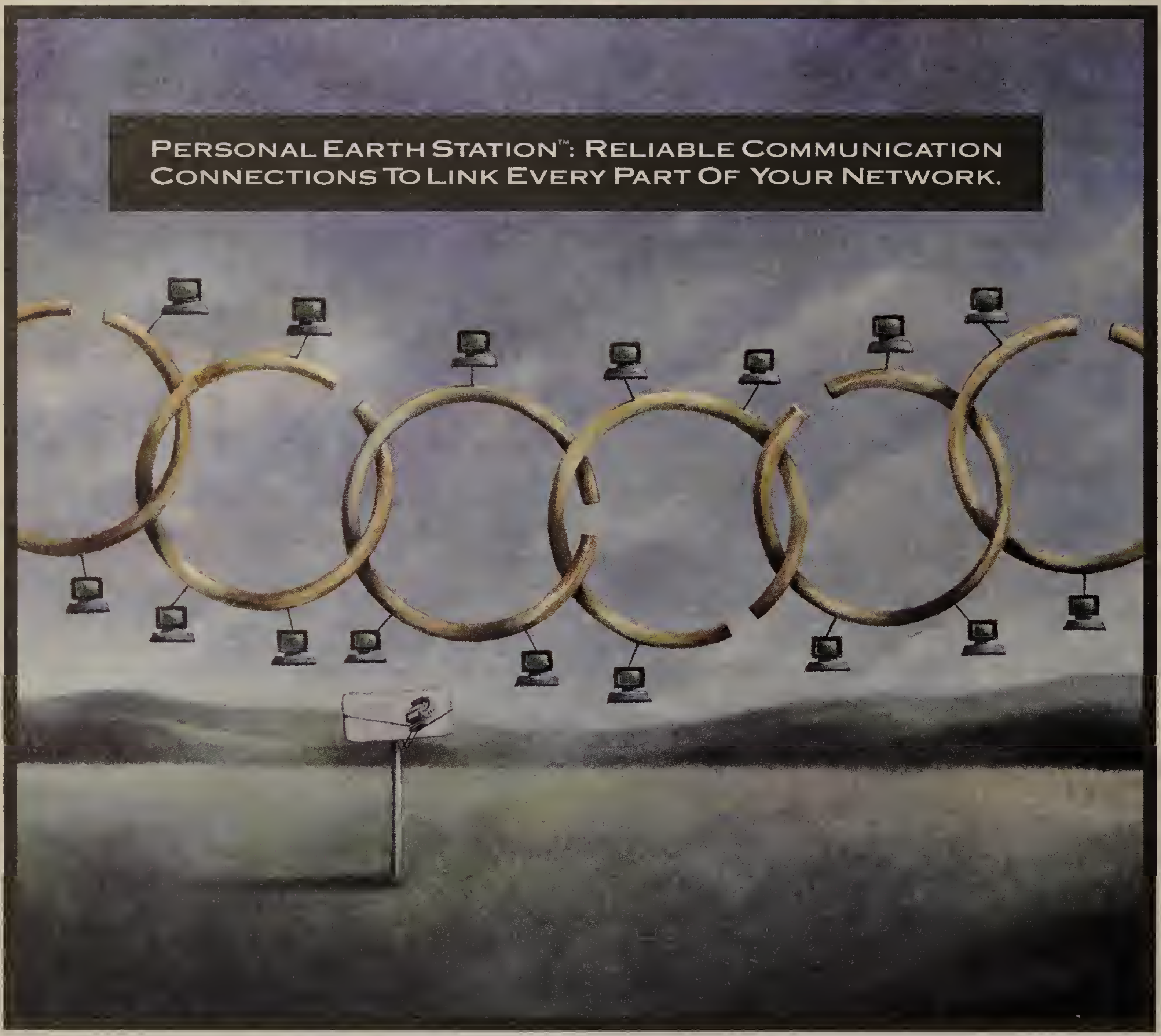
The HP Router/FR, which is equipped with an Ethernet and a WAN port, costs $4,500. The four-port HP Router/SR is equipped with one Ethernet and three WAN ports and costs $6,500. Both bridge/routers will be available this month.

Interconnect Lite

HP's new management tool, HP OpenView Interconnect Lite, is a slimmed-down version of the company's OpenView SNMP-based management system for hubs and internetworking devices. It is also billed as a DME-compatible system, meaning it will be able to run DME-compatible applications from HP and other vendors when they become available.

From a single Interconnect Lite workstation, users can automatically discover, map and monitor all the TCP/IP devices on the network with real-time status reports on net operations.

The software package costs $10,000 and will be available in November. ◻



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GLOBAL SERVICES

DOMESTIC AND INTERNATIONAL VOICE/DATA SERVICES, ACCESS EQUIPMENT AND REGULATORY ISSUES

Worth Noting

Sprint Corp. last week said it will extend its public frame relay service to Vancouver, Toronto and Montreal in the first quarter of 1993. Sprint will likely partner with a Canadian carrier and install Sprint's TP4900 switches in that carrier's network.

Regulatory Update

Southwestern Bell Telephone Co. has asked the Federal Communications Commission to revise its access service tariffs to include service assurance warranties for its T-1 and T-3 dedicated private-line service.

Under the warranties, if the installation of a T-1 or T-3 line takes longer than the prescribed interval, users receive a credit for 100% of the one-time charge for the service, unless the delay is caused by the customer. If lines are down for longer than four hours, users will receive a credit of 50% of one month's recurring charge for the link.

The Illinois Commerce Commission has given **TC Systems-Illinois, Inc.**, a subsidiary of Teleport Communications Group, Inc., approval to offer switched services to users in Chicago and 28 surrounding communities.

In addition to offering access to long-distance carriers' points of presence, TC Systems will roll out a service that links sites to Illinois Bell Telephone Co. or regional carrier networks.

The carrier will also offer analog, digital and Integrated Services Digital Network Centrex. All services will be based on switching systems owned by TC Systems. ◘

Where the bucks are

Breakdown of expected revenue sources for alternative access carriers (in millions of dollars)

Category	1992	1993	1994	1995
Access	$184	$270	$475	$720
Facilities management	$65	$70	$85	$100
Personal communications services	$0	$0	$10	$30
Switched services	$2	$30	$100	$270
Other	$10	$15	$35	$80
Total	$261	$385	$705	$1,200

GRAPHIC BY SUSAN J. CHAMPENY SOURCE: CONNECTICUT RESEARCH REPORT, GLASTONBURY, CONN.

RNS rolls out public frame relay service in Canada

By Bob Wallace
Senior Editor

TORONTO — Rogers Network Services (RNS) has begun offering to users in four Canadian cities a public frame relay service based on StrataCom, Inc. fast packet T-1 multiplexers.

The service, dubbed Frame-Path, is available here and in Calgary, Alberta, Vancouver and Montreal. It will be offered in other Canadian cities based on customer demand.

"We wanted to gain experience with a cell relay platform and use it to offer new services like frame relay," said Brian Nelson, a senior telecommunications consultant with RNS. "The experience will be invaluable."

RNS lost one competitor, National Telecom Corp., just over a week ago. The company, which introduced Canada's first public frame relay service, went bankrupt ("Canadians get first taste of frame relay," *NW*, Sept. 7).

RNS' Frame-Path is based on single StrataCom IPX muxes in each of the four cities linked by high-speed lines leased from another Canadian carrier.

The service supports a variety of access port speeds, ranging from 56K to 1.024M bit/sec in 16K bit/sec increments. Committed information rates are available at the same speeds.

Via a StrataCom switch in Toronto, RNS will interconnect Frame-Path with CompuServe, Inc.'s Frame-Net frame relay service, which is available throughout the U.S.

RNS will likely extend Frame-Path to Ottawa by year end, he said, and may install IPXs in Edmonton, Alberta; Halifax, Nova Scotia; Moncton, New Brunswick; and Quebec, based on user demand.

The service provider charges users a flat rate based on the port access speed and permanent virtual circuit speed.

The offering is sold on either a monthly basis or under term plans ranging in length from one to three years, with volume discounts ranging from 15% to 35%, Nelson said. ◘

Users press for delay in 800 portability

Four financial user groups are first to ask the FCC to push back the deadline for a few months.

By Anita Taff
Washington Bureau Chief

WASHINGTON, D.C. — In what amounts to a vote of no confidence for the FCC's plan to implement 800 portability, major users filed documents with the agency asking it to push back the deadline for availability by three months.

Over the past few months, users have become increasingly concerned that far too many technical, administrative and procedural questions remain to stick to the current schedule for 800 portability. The deadline for the new capability is currently set for March 3, but four groups of financial users recently asked the Federal Communications Commission to delay that deadline until June.

The four groups are the California Bankers Clearing House Association, MasterCard International, Inc., the New York Clearing House Association and Visa USA, Inc.

Users generally agree that 800 portability will give them significant benefits. Currently, 800 numbers are tied to a specific carrier, so it is widely expected that portability will increase competition, drive down prices and increase the flexibility of 800 service.

But an increasing number of users say the risks associated with the FCC's current timetable for portability are too great.

During the last few months, as it became clear that converting local carrier nets to support 800 portability would be an enormous undertaking, users privately and in meetings with regulators began to express fears of the possibility of a major network crash. Finally, unnerved by thoughts of a crash during the busy fourth-quarter holiday season, the Ad Hoc Telecommunications Users Committee asked the FCC to hold off on testing new equipment for 800 portability until the beginning of next year ("Users ask FCC to postpone 800-portability deadline," *NW*, Sept. 7).

Although such a delay raised questions about whether the March 3 deadline could be met, the committee stopped short of asking the FCC to push back that deadline. Since that request, some local carriers have said if they wait until Jan. 1 to begin testing new equipment, they will be unable to complete the process by the March 3 deadline.

For example, Bell Atlantic Corp. told the FCC it must be allowed to begin cutover to new 800 technology in the fourth quarter if it is to meet the FCC's March deadline. "[Bell Atlantic] cannot, at this point, practically accomplish four months of work during the month of January," the carrier stated in a filing with

(continued on page 50)

AT&T intros a low-end Definity PBX

By Joanne Cummings
Senior Writer

SAN DIEGO — AT&T announced at the 1992 TCA Annual Conference here last week a low-end version of its Definity Generic 3 (G3) PBX designed for small firms and smaller offices of large companies.

Although the new G3s model is the smallest in the Generic series, accommodating between 40 and 200 lines, it boasts the same software and capabilities as the larger G3i and G3r models, which can support as many as 25,000 lines, AT&T said.

This will give smaller sites sophisticated features usually found only on bigger switches and enable users to standardize features and phone sets across all locations, regardless of size.

In addition, the G3s switch can be networked with the G3i and G3r, and all can be managed from a central site.

The G3s also offers some new features not found in the earlier G3 switches. It has a credit card-sized Flash read-only memory that stores the private branch exchange's backup programming information, enabling users to quickly reboot the switch after taking it off-line for maintenance, for example.

The Flash ROM card also frees up six slots in the PBX's cabinet, leaving 16 slots for accommodating telephone line cards. The G3i has only 10 free slots, but AT&T is planning to upgrade it to support a Flash ROM card to expand its slot capacity, as well.

The switch is available in two versions.

The G3s Advantage Business Package consists of the base switch, plus one or more optional software packages, such as system management, basic call center, automatic call distribution and voice mail.

The G3s Premier Business Package, targeted at call centers, consists of the switch and all G3 software packages, including support for Look-Ahead Interflow, which enables users to distribute calls among multiple call centers based on traffic loads, and CallVisor Adjunct Switch Application Interface, which is an integrated PBX-to-host interface.

The G3s is available now and ranges in price from about $40,000 for a typically configured 40-line system to $145,000 for a 200-line system. ◘

Patrick B. Stewart
Manager–Distributed Processing
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ENTERPRISE APPLICATIONS

CLIENT/SERVER AND ENABLING SOFTWARE: DISTRIBUTED DATABASE, MESSAGING, GROUPWARE AND IMAGING

Worth Noting

> "The first client/server applications most companies build tend to look like terminal applications. It takes developers several tries before they're able to build true client/server applications."
>
> **David Littwack**
> President
> Powersoft Corp.
> Burlington, Mass.

Store & Forward

Netlogic, Inc. is incorporating Microsoft Corp.'s Message Application Programming Interface (MAPI) into its Cezanne applications development tool. The MAPI extension will make it easier for users to build mail-enabled Windows applications.

LaserData, Inc. is expected to ship this month two new document imaging products for Novell, Inc. NetWare local-area networks. LaserView Optical Storage for NetWare is a set of NetWare Loadable Modules that supports 5¼-in. and 12-in. optical disks and jukeboxes. LaserView Integrated Printing for NetWare supports both image and text printing on a variety of image-enhanced printers.

Unify Corp. recently announced Accell/SQL for Windows, a fourth-generation language that enables companies to build applications that work in both Microsoft Corp. Windows and Unix environments. The product, which will be available in February, works with most popular relational databases. Its preapproved pricing is $495.

Firm rolls out new suite of client/server applications

SAP America package of integrated business software runs on Unix, supports relational DBMS.

By Wayne Eckerson
Senior Editor

LESTER, Pa. — Jumping on the client/server bandwagon, SAP America, Inc. recently unveiled a client/server version of its integrated business software that runs on Unix servers and works with Oracle Corp.'s relational database.

The software, called R/3, contains 18 integrated business applications that cover such areas as financial accounting, production planning, sales and distribution, and office communications.

SAP America plans to ship R/3 in January and issue in mid-1994 a second release of the software containing 21 additional modules, including project management, activity-based costing and other applications.

The firm, based here, is a subsidiary of SAP AG, the ninth largest software company in the world with $442 million in annual sales.

SAP's integrated suite of business software for IBM hosts is used by such corporate giants as Dow Chemical Corp., E.I. du Pont de Nemours & Co., Eastman Kodak Co. and Mobil Oil Corp.

Unix processors

R/3 software, which incorporates much of the same functionality as its host software, runs on Unix processors from Bull HN Information Systems, Inc., Digital Equipment Corp., Hewlett-Packard Co., IBM and Siemens Nixdorf Information Systems, Inc., as well as on HP's HP3000 processor running MPE/iX and DEC VAX processors running VMS.

The client interface can be the Open Software Foundation, Inc.'s (OSF) Motif graphical user interface, IBM's Presentation Manager or Microsoft Corp.'s Windows 3.1.

Communications across local- and wide-area nets is handled via IBM's LU 6.2 and CPI-C protocols and will be based on the OSF's Distributed Computing Environment and Distributed Manage-

(continued on page 26)

NCR adds Unix support to its collaboration platform

By Timothy O'Brien
West Coast Bureau Chief

NEW YORK — NCR Corp. announced recently a new version of its integrated software environment, Cooperation, that adds support for Unix and multiprocessing, and provides enhancements in both network management and data access.

With the previous server version running only OS/2, Cooperation 2.0 now allows users to integrate applications, services, user information and collaborative work across popular Unix platforms.

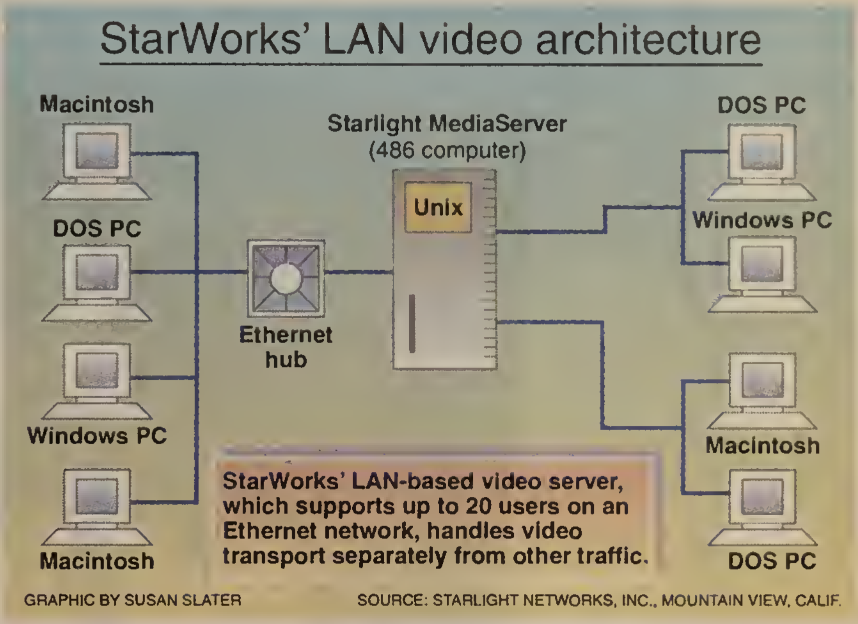
"For many of our users, the ability to run Cooperation on Unix means that they will now be able to run a whole range of Unix applications that weren't available before," said John Lynch, director of network and strategic product marketing for the U.S. group at NCR.

Analysts agreed. "Unix support is particulary important for NCR because Unix is the cornerstone of their computing strategy," said Ann Palermo, director of research at International Data Corp. in Framingham, Mass. "Users who have been piloting Cooperation on OS/2 now have a viable platform through Unix in which to deploy the software across the enterprise."

Cooperation is a system software infrastructure that is layered across machines in a network environment to support both standard and custom applications.

Based on Microsoft Corp.'s LAN Manager network operating system, Cooperation allows users to focus on developing and deploying applications instead of dealing with all the underlying system software and network issues involved in implementing software across enterprise nets.

(continued on page 26)



StarWorks' LAN-based video server, which supports up to 20 users on an Ethernet network, handles video transport separately from other traffic.

GRAPHIC BY SUSAN SLATER

SOURCE: STARLIGHT NETWORKS, INC., MOUNTAIN VIEW, CALIF.

Running multimedia on LANs gets easier

New server software from Starlight Networks helps isolate imaging from other applications.

By Timothy O'Brien
West Coast Bureau Chief

MOUNTAIN VIEW, Calif. — Starlight Networks, Inc. last week announced StarWorks, software that enables digital video applications to run on LANs without impacting other network applications.

By using an application server and its own protocol to move video images over the local-area network, StarWorks insulates video applications from other network applications, making it more feasible to run multimedia on today's LANs.

"We run in parallel, essentially coexisting with the LAN applications," said Jim Long, president of Starlight Networks. "With StarWorks, we have shown that the network no longer needs to be the bottleneck in implementing multimedia video applications."

StarWorks consists of Unix-based application server software running on a dedicated Intel Corp.-based 80486 computer and client software that runs on DOS, Microsoft Corp.'s Windows and Apple Computer, Inc.'s Macintosh computers.

It manages the storage of streaming data — video — to make it possible for users to simultaneously access the same or multiple videos, the company stated.

Using arrays of Winchester disk drives and a Streaming Redundant Array of Inexpensive Disks (RAID) algorithm that is being patented, data is stored across arrays of disks, allowing as many as 20 users to view the same video file, even when all access times are different.

StarWorks utilizes its own protocol, called the Media Transport Protocol, to move the video images in the form of data streams across Ethernets.

As initially shipped, StarWorks will only be available on a Starlight MediaServer system, an i486/50 MHz Extended Industry Standard Architecture computer integrated with appropriate network and disk subsystems.

StarWorks will be sold separately starting in the second quarter of 1993.

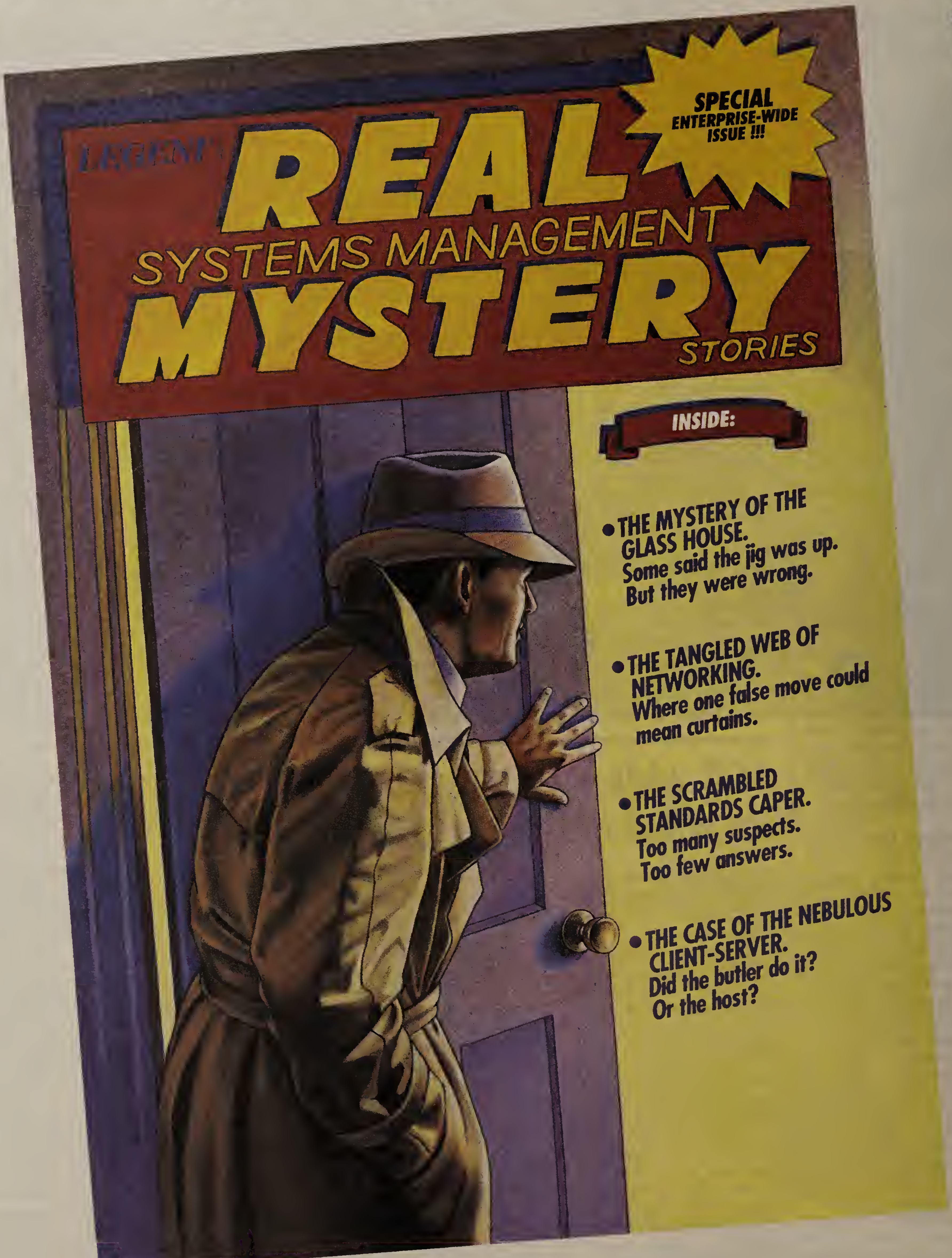
It is possible to configure the MediaServer in several ways. Multiple Ethernet segments can be tied directly to the server, or a switching hub can be tied to the server via multiple Ethernets, enabling clients tied to the hub to access the device.

StarWorks is designed to work with popular video formats, such as QuickTime from Apple and Digital Video Interface from Intel and IBM.

It is also independent of the network operating system and, consequently, can run on virtually all leading networks including Novell, Inc.'s NetWare and Microsoft's LAN Manager.

One of the big questions about running multimedia, and especially video applications, is LAN performance. But Long said there

(continued on page 26)



LEGENT'S

REAL SYSTEMS MANAGEMENT MYSTERY STORIES

SPECIAL ENTERPRISE-WIDE ISSUE !!!

INSIDE:

- **THE MYSTERY OF THE GLASS HOUSE.** Some said the jig was up. But they were wrong.
- **THE TANGLED WEB OF NETWORKING.** Where one false move could mean curtains.
- **THE SCRAMBLED STANDARDS CAPER.** Too many suspects. Too few answers.
- **THE CASE OF THE NEBULOUS CLIENT-SERVER.** Did the butler do it? Or the host?

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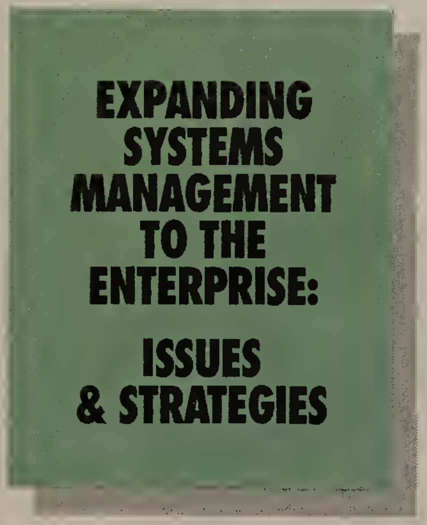

EXPANDING SYSTEMS MANAGEMENT TO THE ENTERPRISE:

ISSUES & STRATEGIES

We at Legent have written a special research report that spells out how we see the future of enterprise information systems, and the challenges and issues to be dealt with. It explains how the traditional disciplines and goals of systems management can be applied to heterogeneous computing environments, allowing you to create and manage true enterprise-wide systems.

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To receive your personal copy, call **1-800-676-LGNT, Ext. 56.** And we'll be happy to throw the book at you.

LEGENT

Firm rolls out new client/server apps

continued from page 23

ment Environment in the future.

R/3 supports a three-tiered client/server architecture in which the application logic, data and user interface are run on separate computers. R/3 also supports a more typical two-tiered, client/server architecture.

Tools for development

In addition to the applications, SAP America is marketing the tools it used to develop the R/3 software, which should make it easier for customers to adapt the software to their environments.

One tool is the Information Model, which is the blueprint used to map the data and business functions available in R/3.

SAP America also plans to issue an organizational model as part of the blueprint that will enable customers to map their organizational structure and business requirements to the components of R/3.

In addition, SAP America is selling its ABAP/4 fourth-generation language, an active data dictionary and other tools it used to develop R/3.

This Development Environment also contains an extensive data library with 2,000 objects that define various business functions.

The R/3 software pricing starts at $50,000, depending on the number of users supported and modules purchased.

Pricing for the Information Model starts at $5,000. The Development Environment starts at $25,000, depending on the number of users and the hardware configuration. ☑

Running multimedia on LANs gets easier

continued from page 23

can be no such thing as fast or slow performance for these applications.

"With video, either it works or it doesn't. There can be no compromise," he said. "The issue of performance comes down to how many simultaneous users you can support and what kinds of restrictions need to be placed on those users."

Not a panacea

Without StarWorks, users wanting to run video applications on a LAN would need to use a highly optimized file server. But Long maintains that will not solve all the problems.

"A powerful server is not enough," he said. "Video applications need to be managed on both the server and the network. That's why we needed to develop this new architecture."

A MediaServer system configured with StarWorks-12 for 10 simultaneous DVI users and 3G bytes of storage (approximately six hours of video) costs about $23,500. A device with StarWorks-25 that supports 20 simultaneous DVI users and 6G bytes of storage (12 hours of video) costs $39,500.

The software-only version will cost $9,950 for a 10-user version and $18,495 for a 20-user version. One year of maintenance support and software upgrades are included in the price. ☑

Unix support added to NCR's platform

continued from page 23

This integrated software environment allows users to access, collect and manipulate data from the desktop, as well as share information across work group, departmental and corporate networks.

The new version supports Unix servers, such as the NCR 3550, and can accommodate multiprocessing in Unix servers that are configured with large numbers of interconnected microprocessors.

On the client side, Cooperation requires Microsoft Windows.

Cooperation 2.0 also provides users with new network management and systems capabilities. NCR said the StarSentry network management platform, which includes applications developed by AT&T and NCR, can now manage servers running Cooperation or Novell, Inc. NetWare.

StarSentry provides support for remote Cooperation servers via the Transmission Control Protocol/Internet Protocol, Open Systems Interconnection or LU 6.2 protocols.

In terms of data access, Cooperation 2.0 continues to support Informix Software, Inc. databases, IBM's DB2, Oracle Corp.'s Oracle Server and Gupta Technologies, Inc.'s SQLBase. However, it now provides access to these databases from Unix platforms.

Through Cooperation, users can integrate information transparently from multiple databases at their desktop because Cooperation takes care of the client/server links to the database servers.

Cooperation Unix 2.0 will be available this month. ☑

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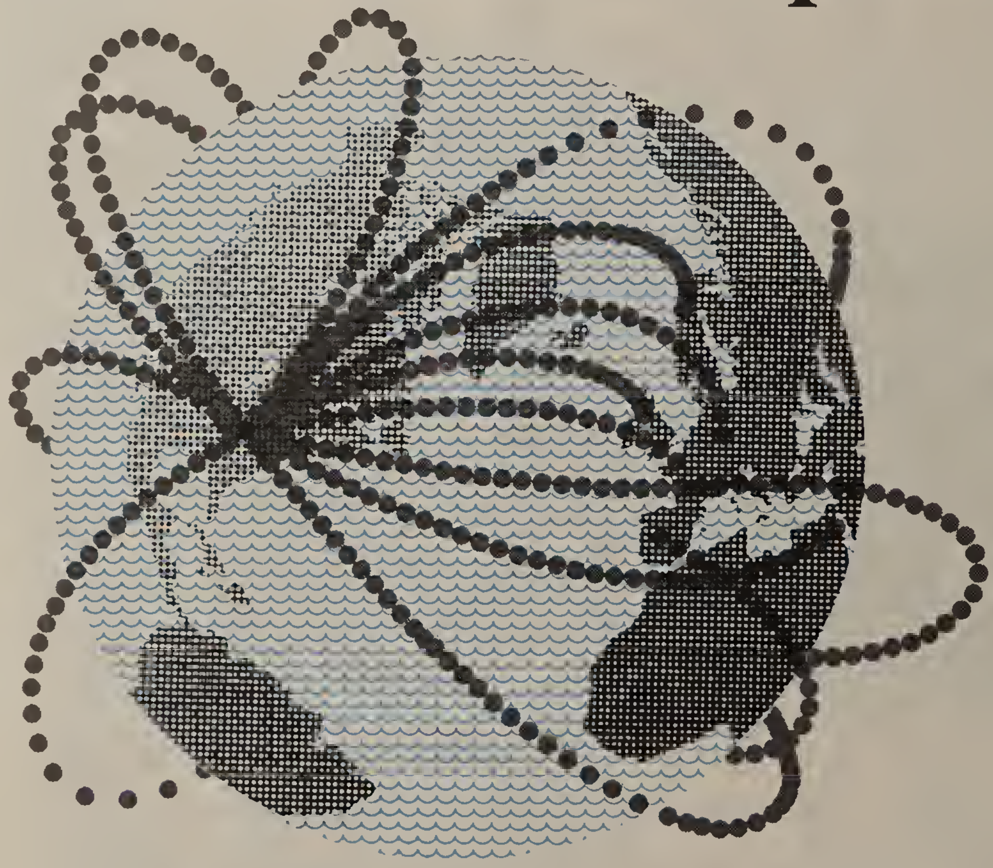

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INDUSTRY UPDATE

VENDOR STRATEGIES, MARKET TRENDS, ALLIANCES AND FINANCIALS

Worth Noting

Wellfleet Communications, Inc., a Bedford, Mass., router vendor, has been named America's fastest growing company by *Fortune Magazine* in its annual issue — to be released today — about the 100 fastest growing companies.

People & Positions

Northern Telecom, Ltd. of Ottawa has named **Jean Monty** as the company's president and chief operating officer. He was also elected to the corporation's board of directors and as a member of its executive committee.

In his new position, Monty will have the presidents of Northern Telecom's three product groups, its research and development group, and its components and services group reporting to him. These positions previously reported to Paul Stern, who has been serving as the company's president, as well as its chairman and chief executive officer.

Infonet Services Corp., an El Segundo, Calif., value-added net service provider, last week named **John Hoffman** executive vice-president of communications sales and service. He will oversee the sales and support of Infonet's communications products and services on a global basis.

Hoffman was previously in charge of the company's commercial services division.

Ungermann-Bass, Inc., a Santa Clara, Calif., internetworking equipment vendor, has named **Richard Hamilton** director of support engi-

(continued on page 30)

Fibronics reintroduces Spartacus

Name:	Spartacus Division
Formed:	Sept. 1992
Based:	Lowell, Mass
History:	Evolved from Spartacus Computer, Inc., which Fibronics bought in 1986
Mission:	To develop and market TCP/IP-based mainframe-to-LAN connectivity products
Primary products:	KNET TCP/IP mainframe software and K3000 Network Controller
Annual revenue:	Roughly $6 million
Employees:	24

GRAPHIC BY SUSAN J. CHAMPENY   SOURCE: FIBRONICS INTERNATIONAL, INC., PEMBROKE, MASS.

Fibronics puts new spin on mainframe-to-LAN side

Spartacus unit to handle this side of business.

By Bob Brown
Senior Editor

PEMBROKE, Mass. — Fibronics International, Inc., based here, has formed a new division to handle marketing and development for its KNET TCP/IP-based mainframe-to-LAN connectivity products.

Fibronics, which makes most of its revenue from sales of routers, hubs and other hardware products, launched the Spartacus Division to give its mainframe-to-local-area network business more autonomy. The company also hopes the repackaged Spartacus unit will attract outside investment.

John Hislop, acting president of the Spartacus Division and joint chief executive officer at Fibronics, said he already has a list of more than 20 possible investors. The cash infusion will fund the research and development needed to grow Spartacus, money Fibronics cannot afford to draw away from its core internetworking business, he said.

The spinoff of the mainframe-to-LAN business comes amid a major restructuring of Fibronics. In the first six months of the year, the company piled up $5.4 million in losses, some of which were for restructuring charges.

The Spartacus Division initially will remain tightly integrated with Fibronics' operations, said Bill Panepinto, previously director of marketing at Fibronics and now vice-president of sales and marketing for Spartacus. But, ultimately, the unit will have separate profit-and-loss responsibilities and its own budget, Panepinto said.

The Spartacus Division, which is mostly software-oriented, evolved from the product line acquired by Fibronics in 1986 when it bought a company called Spartacus Computer, Inc.

The new division represents about $6 million of Fibronics' nearly $54 million in annual revenues.

Bill Panepinto

Spartacus' KNET product line features KNET Network Software, including a Transmission Control Protocol/Internet Protocol stack offering that runs on IBM 370 and compatible mainframes and provides for LAN connectivity. The division's primary hardware offering is the K3000 Network Controller for attaching Ethernets to mainframes.

A new management product is waiting in the wings, Panepinto said.

The formation of the new division will enable Fibronics to better leverage its KNET products, he said.

These products give Fibronics a unique offering among internetworking vendors in the area of integrating LAN internetworks with traditional mainframe environments, Panepinto said. They provide users with the opportunity to make their mainframes "into big data servers on multivendor networks."

According to Panepinto, the new division's primary competitor is IBM. ◘

Retailers bargain for new buying group

Miffed at trade group, retailers unite to form Retex, a competing net services-buying consortium.

By Bob Brown
Senior Editor

NEW YORK — Upset over the top retail industry trade association's management of a retailer consortium set up to buy network services at discounted rates, a group of retailers has launched a competing consortium.

The formation of the new group, dubbed Retex, Inc., raises questions about the future of SpecNet, the first national network services-buying consortium for specialty retailers ("Retailers band together for larger net discounts," *NW,* Oct. 14, 1991).

SpecNet, which was formed about two years ago and now has roughly 75 members, is designed to provide retailers with greater savings on their telephone and data services bills than they would receive through separate deals.

While SpecNet has been successful in cutting some of its members' bills by as much as 30%, 10 of the group's 12 advisory board members recently resigned because they were unhappy with the program's direction.

They argued that the National Retail Federation (NRF), an industry trade group that agreed to provide administrative support to SpecNet in January 1991, had taken control of SpecNet for its own purposes and had stripped the board of any real control.

More specifically, the board members believed they were being left out of the decision-making process to select a data communications services provider.

"What led to the board [members] leaving is that the NRF did not adhere to commitments made when it began providing administrative support in 1991," said Richard Faul, executive di-

(continued on page 30)

INDUSTRY BRIEFS

3Com posts strong numbers. Local net equipment supplier 3Com Corp. posted revenue of $130.9 million for its first fiscal quarter ended Aug. 31, up 51% from $86.6 million for the first quarter last year. Revenue grew about 8% over the fourth quarter. Earnings for the quarter were $4.8 million, more than double the earnings in the first quarter last year. This is the second full quarter to include revenue and earnings from the data networking business of BICC Group plc, which 3Com acquired last year.

Grand Junction starts up. Howard Charney, a founder and former executive of 3Com Corp., last week announced the start-up of a company called Grand Junction Networks, Inc. in Union City, Calif.

The firm, which will make high-speed local-area network products, recently completed a $4.5 million round of venture capital financing from lead investors Merrill Pickard Anderson and Eyre, Technology Venture Investors and Associated Venture Investors.

Charney is president and chief executive officer of the company. Bob Metcalfe, principal inventor of Ethernet and a 3Com founder, is on the new company's board of directors.

HP, RAM partner. Hewlett-Packard Co. and RAM Mobile Data have announced they will jointly market HP's 95LX palmtop personal computer and RAM's wireless data communications service. Using the HP palmtop PC and RAM's service, users will be able to access host-based data and exchange electronic mail, among other things. ◘

SOME COMPANIE
WILLING TO PAY FOR A
IT'S THE ONLY

Design. Engineering. Testing. Service. Support. When you think about it, these are what make one computer better than the next. Which makes it all the more surprising that companies are cutting back in these areas. And, amazingly, some do little but stick their name on at the end of somebody else's assembly line.

It would be like buying a car, looking under the hood, and discovering that it was built by a company you'd never heard of from a place you'd have trouble finding on the map.

It makes you wonder about the kind of company that would do it. Why they would make the decision to put their name on a product over which they maintain little control. And why they would then sell it to their customers.

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Other PC companies do things differently, like offering substantially limited service and support for products they appar- ently have less confidence in. Dell has even gone so far as to withdraw their

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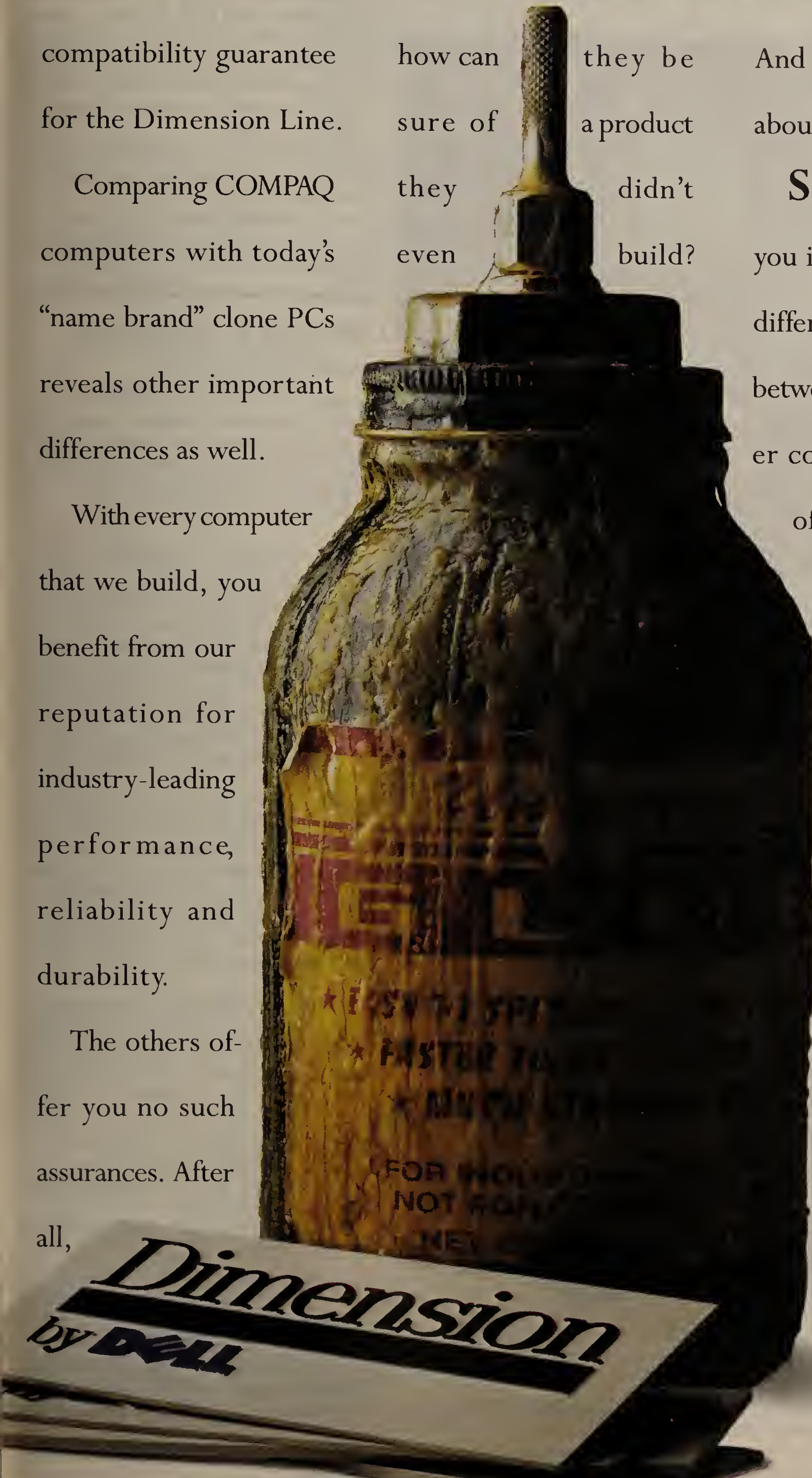

While other companies have been forced to cut corners, at Compaq, we've managed to lower our prices without lowering our standards.

Some ideas are better than others. Unlike a lot of today's clones, the new COMPAQ PCs are all designed, engineered and tested by Compaq.

COMPAQ

Retailers bargain for new buying group

continued from page 27

rector of Retex and a former NRF employee. "The NRF wanted to relegate the board to an advisory role, not allow it to be the agreed upon active board that would oversee programs, funding, employment and resources for SpecNet."

Jack Schultz, president of business services and executive director of the NRF, denied that the federation reneged on an earlier agreement. He described the resignations as the actions of a small group of SpecNet members who were looking out for themselves more than for the overall SpecNet membership.

"We were interested in protecting the interests of all of the members, not just a few," he said.

Schultz noted that even though the individuals resigned from the advisory board, their companies remain SpecNet members and are continuing to enjoy discounts from a contract signed with MCI Communications Corp. about 10 months ago. Under that contract, SpecNet's members earn discounts for their individual volume and share a commission given by MCI to SpecNet based on the consortium's overall usage of MCI's service.

SpecNet promises to become even more attractive by year end, when it expects to have a signed contract with a vendor for discounted data communications services, Schultz said.

According to Faul, although only 10 members resigned, those who did were the ones who got SpecNet off the ground and have the technical expertise needed to determine the best contracts with carriers.

"The [board members] who resigned are the founding members of SpecNet and represent about 75% of its traffic and spending volume," Faul said.

According to the NRF, the retailers whose representatives resigned from SpecNet's board account for less than half of SpecNet's volume.

Representatives from C&R Clothiers, Inc., The Gap, Inc. and Petrie Stores Corp. are among those who have signed on to the Retex board, Faul said.

"The idea behind Retex is to have a consortium run by retailers for retailers, not for the NRF," said Jesse Stancarone, vice-president and chief information officer at C&R Clothiers. Stancarone, one of SpecNet's founders, is among those who resigned from SpecNet's advisory board to join Retex's board.

Given the start-up nature of Retex, however, talk of SpecNet losing membership is premature, Schultz said.

For more information on Retex, call (914) 533-6007. For more information on SpecNet, call (212) 244-8780.

People & Positions

continued from page 27

neering. He will be in charge of UB's computer system-based support services as well as other customer information services. Previously, Hamilton was the vice-president in charge of systems support services at McDATA Corp.

Telebit Corp., a Sunnyvale, Calif., network equipment vendor, last week named **Paul DePond** to the newly created position of vice-president of product marketing. DePond will be responsible for the company's worldwide product marketing organization, strategic marketing relationships, and analyst and press relations.

Previously, he was vice-president of marketing for wiring hub vendor Alantec.

Evernet Systems, Inc., a nationwide net integrator based in Los Angeles, has named **Michael Caglarcan** as the firm's chairman, president and chief executive officer. He has been senior vice-president of field operations since joining Evernet in September 1990. Caglarcan succeeds **Luther Nussbaum,** who resigned.

Thomas Glassanos has been named vice-president of marketing at **Edify Corp.**, a Santa Clara, Calif., vendor that sells a turnkey product for integrating various messaging technologies to support customer service and support applications. Glassanos will be responsible for product management strategy, sales development, corporate communications and business alliances.

He was previously vice-president of product marketing and business development at NetFRAME Systems, Inc.

Tricord Systems, Inc., a Minneapolis superserver vendor, has announced two new board members, **Robert Casale** and **Donald Lucas.** Casale is group president for Automated Data Processing, Inc. of Jersey City, N.J. Lucas is chairman of the executive committee for the board of directors at Oracle Corp. as well a private venture capitalist.

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MANAGEMENT STRATEGIES

MANAGING PEOPLE AND TECHNOLOGY: USER GROUPS AND ASSOCIATIONS

Worth Noting

> "We monitor our network very diligently and even have everyone in the company sign a form saying they are aware of software licensing laws. But even with all our diligence, software piracy happens."
>
> A network manager
> at a large aerospace firm who
> requested anonymity

Manager Minutes

Unix International, Inc. has released a guide to implementing open, high-performance transaction processing systems and integrating them with existing mainframe applications. "Open Enterprise Transaction Processing: Integrating the TUXEDO System with Mainframe CICS," focuses on helping users migrate to transaction processing systems based on Unix System V.

Written for MIS managers, application developers and system integrators, the guide provides overview and functional comparisons to the Unix-based TUXEDO transaction system and IBM's CICS.

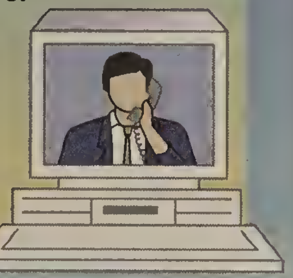
The guide, which costs $35, can be ordered by calling (201) 263-8400, Ext. 500.

The **Security Alliance For Enterprise (SAFE) Computing Group** has announced its guide to information on Unix security issues. "The SAFE Catalog of Security Awareness Materials" covers encryption, hacker protection, viruses, cost-justification of security measures, risk assessment and basic network security procedures.

For more information or to obtain a free copy of the catalog, call (908) 522-6566.

10 steps to successful sales force automation

1. Determine the functions to automate
2. Automate only what needs automating
3. Gain top management support and commitment
4. Employ open, upgradable technology
5. Involve end users early
6. Prototype the system
7. Train users
8. Motivate personnel
9. Refine systems as necessary
10. Keep management committed



GRAPHIC BY SUSAN J. CHAMPENY SOURCE: INFORMATION SYSTEMS MARKETING, INC., WASHINGTON, D.C.

MANAGEMENT INSIGHTS

BY ERIC SCHMALL

The seven management sins

Network managers constantly worry about committing career-ending errors. While any number of individual disasters could easily hobble a career, none are so fatal as the following seven management sins:

Ignore people development. Management is getting things done through people. Managers who neglect staff development and don't spend the time and money to keep their staff up-to-date have no chance of sustained success.

Lack technology/business balance. The manager who stays fixated on the wonders of technology without knowing what it means for the business will ultimately fail. Managers must be astute translators of business needs into technology answers and must be as adroit with calculating returns on investment as with discussing time-division multiplexing.

Stay out of politics. Don't ever deceive yourself into thinking that your job has no political aspects. You have been vested with certain authority, and you have to seek and build additional power through knowledge and influence to accomplish most of your goals implicit in your job description.

Become a monopoly with an attitude. At the core of our responsibilities lies the function of providing information. One quick way to betray this trust is to adapt the bloated arrogance of an unregulated monopoly. Setting up arbitrary chargeback rates and ignoring complaints will get you outsourced.

Establish an inflexible orthodoxy. It's tough to resist the temptation to protect the net from too much tampering. Today's competitive environment calls for a network staff that nimbly deploys services and learns fast, adapts and adjusts.

Grow, don't create. Creativity doesn't mean simply augmenting your group's arsenal with the latest and greatest products and services. What counts is how you and your staff can integrate them to cut costs, increase revenues or enhance your firm's productivity.

Be a Lone Ranger. Success is assured to those who can build and energize people into teams. The real heroes are those who work for cooperative efforts and can build bridges between their unit and users, vendors and other units.

Schmall is director of telecommunications at an insurance holding company.

Tips for successful sales automation

Net-based technology helps sales, marketing organizations boost revenues by as much as 20%.

By Joanne Cummings
Senior Writer

WASHINGTON, D.C. — Large corporations are looking to networks to help make their sales and marketing operations more efficient and effective through a process known as sales force automation.

Sales force automation combines business process reengineering, relational database management systems and graphical user interfaces to help sales and marketing personnel better track leads, coordinate sales initiatives and maintain good customer relationships.

When implemented correctly, sales force automation can result in a 20% annual increase in revenue, according to Barton Goldenberg, president of Information Systems Marketing, Inc., a consulting firm based here.

There are 10 steps network managers must follow in order to successfully automate sales and marketing operations, Goldenberg said (see graphic, this page).

First, managers must determine the functions that should be automated and automate only those functions. This is accomplished by conducting an objective audit of the current operation and listening to sales and marketing people to figure out where automation would best meet their needs.

Goldenberg said managers must be willing to recognize and change inefficient business processes, rather than simply automating everything.

"Automating an inefficient business process can be a costly mistake," he said.

Users must then demonstrate the business benefits of the move to gain the support of top management. Once garnered, that support must be continually cultivated with regular updates and details on cost savings.

End-user support is also key. Users must be involved at every stage of the process, and managers must make sure they are properly trained.

Perhaps the most important step is employing technology wisely. This includes selecting open networking platforms that will enable the system to be easily enhanced over time and will prevent the company from being locked into one vendor's product or schedule. It also means choosing modular software applications that are easily customized and can be integrated with existing databases.

To assist in that step, Goldenberg's firm tests several sales automation software packages each year and publishes a directory, priced at $995, listing the best packages, their features and prices.

One example of successful sales force automation is a contact and billing management system currently used by Reed Exhibitions Co., a trade show organizer headquartered in Newton, Mass.

Reed's system consists of a Data General Corp. minicomputer running DG's Infos third-generation database. The database is accessed by users working on personal computers emulating dumb terminals, said Pat Coen, vice-president of information systems at the firm. The system enables the company's more than 100 salespeople to keep track of contacts and organize sales calls.

"It shows who they should be calling that day, what they said in the last conversation and who within the company has contacted that person," Coen said.

"It allows them to sell more intelligently," he said.

Coen said Reed is looking at moving the system from a minicomputer-based environment to a local-area network-based system using a relational database and a client shell running under Microsoft Corp.'s Windows.

"We're hindered a lot by the structure of the database," Coen said. "We're hoping that moving into a LAN environment and using an SQL relational database will give us better tools and quicker access to the information."

For more information on sales force automation or a copy of the application guide, call Information Systems Marketing at (202) 363-8996.

OPINIONS

NETWORK INTEGRATION CONSULTING

BY JAMES CARLINI

Users should step carefully in search for net integrator

Now is the time for all good network managers to begin evaluating network integrators, keeping a keen eye out to separate the qualified service providers from the "wannabes."

With the trend continuing toward keeping programming and development staffs lean, users with large, complex projects will be more open to the idea of teaming with an integrator. And the number of integrators out there is growing.

As network products become commodity items and profit margins on them plummet, hardware vendors are increasingly offering network integration services. Some regional Bell holding companies also see network integration consulting as a new cash cow ready to be milked.

> If the only tools they sell are hammers, all of your problems may look like nails.
>
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If you want to team with an integrator, beware of large firms that talk about company-wide qualifications. This means that somewhere, sometime, they worked on projects that involved networks and applications similar to yours — but it does not mean the team they are putting together for your project has the necessary expertise.

Always check the backgrounds of the people who will be assigned to your project. Integrators who have worked on 80 retail projects, for example, won't be of any help to a retailer if the integrators who worked on them have left the company or are not assigned to the project.

Also, be wary of firms that have "bought" their credentials and references. Sometimes, a large firm will buy out a small firm with specific expertise — such as disaster recovery planning — and then market that expertise as its own. That practice is more common than you might expect.

You should also watch for network integrators that sell a particular product line. To paraphrase the old adage: If the only tools they sell are hammers, chances are all of your problems will look like nails. You can't expect this type of company to approach your project with any objectivity.

Beware of "proven" methodologies that have not really been tested or implemented. Some network integration consultants are coming up with structured approaches to mixing multivendor platforms that look good on paper and presentation graphics but have never really been implemented.

Avoid companies that want to make you their first success story. Chances are you'll pay dearly for their learning curve. They may become good network integrators as time goes on, but unless they provide some tangible discount or other incentive, it isn't worth it.

With these cautions in mind, review the competition. There will always be someone who can help you, but that someone may not come in the form of the big network integration firm.

Now is the time to begin understanding how to evaluate network integration services and employ them effectively. Make your selection wisely.

Carlini is president of Carlini & Associates, Inc., a management consulting firm in Hinsdale, Ill. He also lectures on information technology at Northwestern University in Evanston, Ill.

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EDITORIAL

Video over 10Base-T deserves close examination

A handful of network vendors will stage a demonstration at NetWorld 92 Dallas next week to showcase the viability of running full-motion video over LANs.

But any such effort to offer video over local-area networks seems to offer only short-term gains to users that may otherwise benefit from increased bandwidth provided by Asynchronous Transfer Mode (ATM) services.

The effort — put forth by Alantec, Intel Corp., Novell, Inc. and ProtoComm Corp. — surely is a noble one. Should the demonstration come off without any hitches, the effort could open the door for users to roll out video applications across existing LANs well before the availability of ATM products and services.

A viable option to ATM, which promises to deliver ample bandwidth to support video, would allow network managers to provide the underlying communications fabric to support new applications.

The four vendors involved in the demo are not breaking new ground. LANNET Data Communications, Inc. has also paired with some software companies to push an alternative method for supporting video over 10Base-T nets.

While video over 10Base-T may be economically attractive, users may want to consider the long-term viability of such a solution, especially since ATM is not that far off. Data compression may free up enough bandwidth on 10Base-T nets for video, but ATM will provide plenty of bandwidth for video and other applications.

Users that decide they can't wait for ATM may want to consider the proprietary nature of any video-over-10Base-T proposal. Current proposals to support video over 10Base-T are based largely on proprietary data compression algorithms. Users that buy into either plan may find applications are locked into that operating environment.

What's needed is for standards to prevail. But until they do, users have to weigh the short-term gains of video over 10Base-T against the longer term benefits of video over ATM nets.

DBMS ISSUES

BY RICHARD FINKELSTEIN

Confused by DBMS benchmarks? Join the club

Standard database management system benchmarks today have little practical value. The Transaction Processing Performance Council's (TPC) two benchmark tests, TPC-A and TPC-B, and a third test, which is known as TPC-C and is still in development, do not simulate real-world environments and tempt vendors to tweak their DBMSs to achieve high benchmark figures.

TPC-A and TPC-B measure how quickly DBMSs can execute basic banking transactions in transactions per second (TPS) and evolved from the Debit/Credit benchmark, which involved simple database transactions.

The Debit/Credit benchmark allows vendors to run tests with very small database tables that can fit into random-access memory and do so without database recovery logs that are necessary for recovering transactions if the system fails.

TPC-A and TPC-B address the problems of the Debit/Credit benchmark by setting ground rules and providing auditing guidelines. Furthermore, any results from TPC benchmarks must be accepted by the TPC and documented for public review.

Specifically, TPC-A and TPC-B require that the data table being used in the test contain information about customer accounts. The number of accounts in that table must be scaled so that there are 100,000 accounts for each TPS. This requirement creates a large table and prevents vendors from stuffing the table into RAM.

Another requirement is that the DBMS use atomicity to back out of a transaction if an update is not completed and durability features to recover completed transactions after a system crashes or a disk fails.

TPC-A and TPC-B are major improvements over the Debit/Credit benchmark, but they are just as flawed and full of loopholes. The transaction used in TPC-A and TPC-B is ridiculously simple and does not simulate a real-life environment.

Vendors interested in displaying very high benchmark results spend a lot of time and money building special features into their DBMSs that enable them to take advantage of these flaws and loopholes, which is counterproductive. Vendors should use that time and money to build useful capabilities into their DBMSs.

> TPC-C is indeed more realistic than TPC-A and TPC-B, but it presents new problems.
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To address some of these problems, the TPC is developing TPC-C, a model order-entry environment that contains a mix of read-only and on-line transaction processing database activities.

The TPC has designed a new metric to measure DBMS throughput, which in this case, is the number of orders processed per minute.

TPC-C attempts to create a processing load that is more representative of real-life environments. This is done by requiring a more complex database and a higher level of contention for database resources, among other things.

In addition, it requires nonuniform access to DBMS tables, which creates DBMS hot spots — a frequently accessed database record that could become a bottleneck in a real-life production system, for example.

TPC-C is indeed more realistic than TPC-A and TPC-B, but it presents new problems. It's expensive to run, which precludes smaller vendors from using it. Also, users and analysts will find the results more difficult to interpret. And it still represents only one type of application.

Users have two practical alternatives to these industry-standard benchmarks. One is to perform in-house benchmarks that more accurately predict application performance. Although they are more realistic, even these types of benchmarks tend to overestimate the DBMS's capabilities.

Another avenue — the one that I often take — is simply to interview other users with similar applications and ask them what kind of performance they are attaining. You will quickly find out just how wide the gap is between vendor pronouncements and reality.

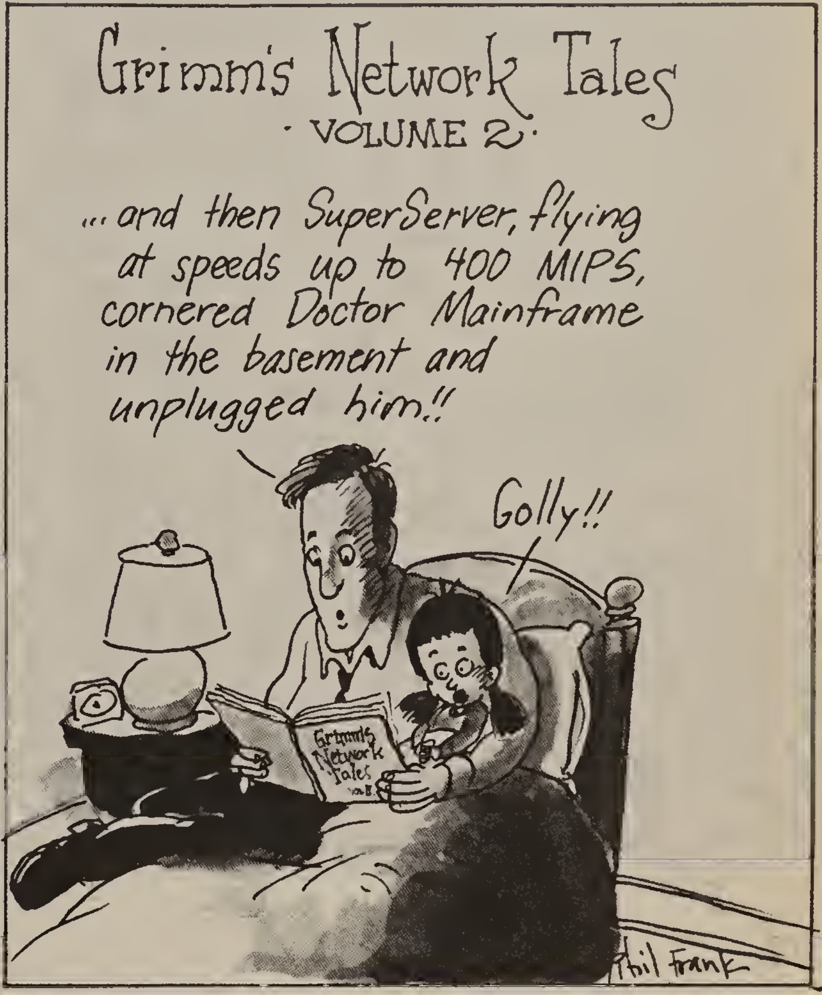
Still, TPC benchmarks are a fact of life. Vendors will continue to run them because they help sales and users ask for them. However, users should take TPC benchmark numbers with a grain of salt and remember that vendor-to-vendor comparisons based on TPC results are often misleading.

Try your own benchmarks and talk to other users. That is the best way to get a true sense of DBMS performance capabilities. ◘

Finkelstein is president of Performance Computing, Inc., a consulting company in Chicago that focuses on client/server and rightsizing applications.

TELETOONS

BY FRANK AND TROISE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· VOLUME 2 ·
...and then SuperServer, flying at speeds up to 400 MIPS, cornered Doctor Mainframe in the basement and unplugged him.!!
Golly!!
Grimm's Network Tales
Phil Frank

LETTERS

Clearing the air

Your article "Critics knock frame relay's usefulness" *(NW,* Aug. 10) distorted comments I made at our Gigabit Networks conference in Washington, D.C. this past July. It misinterpreted my evaluation of Switched Multimegabit Data Service (SMDS) vs. frame relay and introduced conclusions I neither made nor intended.

I made some direct comparisons between frame relay and SMDS, and pointed out pros and cons for both. However, I did not say "SMDS has it all over frame relay," as the article stated. The point I made was frame relay is strongly favored by users as opposed to the carrier-imposed SMDS and, for that reason alone, has an excellent chance to dominate SMDS.

I stated frame relay has many near-term advantages. For instance, it is available now and is simple. I also said SMDS has some long-term advantages. For instance, it has a more complete definition, thereby admitting a standard implementation as opposed to the current proprietary implementation in the backbone wide-area network.

I also made it very clear that the most important issue that will determine the acceptance or rejection of SMDS over frame relay is the tariff structure to be chosen by the carriers. Indeed, in a survey we conducted at the conference, 25% of the attendees said they would never adopt SMDS.

I said frame relay's current speed limitation is 2M bit/sec but can support much higher speeds and noted frame relay often produces a larger delay than SMDS in many cases.

Leonard Klienrock
Chairman
Technology Transfer Institute

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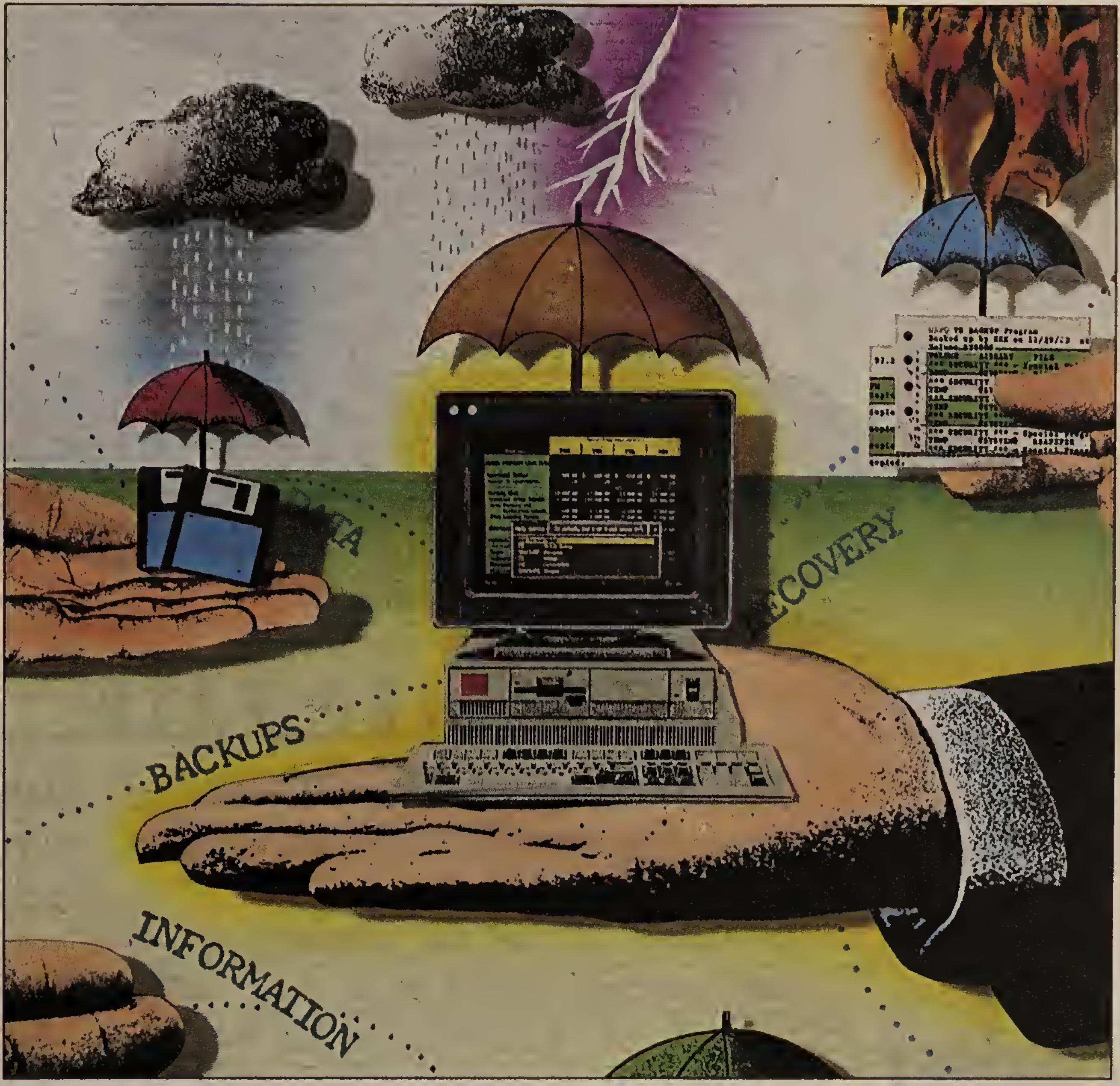
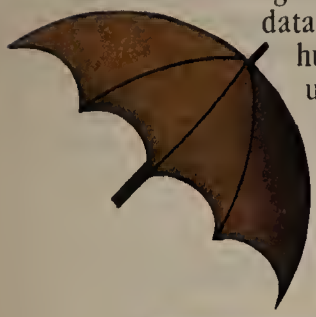
Masters of disasters

Recovering from a network disaster takes more than just a good tactical plan; users need to understand the ins and outs of recovery services.



When Hurricane Andrew slammed into south Florida in August, it ripped apart buildings, uprooted trees and tossed ships around like toys. But despite its brute force, the storm didn't harm the University of Miami's voice and data networks.

Even though the storm knocked out electrical power in the region, the university's data center continued to hum, thanks to backup generator power and some of the most advanced network disaster planning in existence.



"We were business as usual," says Ted Lipsky, telecommunications project director at the university.

On Saturday, Aug. 22, two days before Andrew hit land, a SWAT team of net managers instituted a disaster recovery plan that had been revamped only a few months earlier. SWAT team members made tape backups of data and sent them to a precautionary storage site. All buildings with critical network components were prepared to weather the storm according to instructions mapped out in the disaster plan. By 6 p.m. Sunday, the team had secured the school's networks.

While other businesses were picking up the pieces after Hurricane Andrew passed, the university's network staff maintained its routine. In fact, a few days after the storm, network-based systems cut payroll checks as usual.

"We were fortunate to have the foresight to develop a major disaster recovery and mobilization plan," Lipsky says. "If we hadn't, this place would not have been ready."

Network managers at many companies have realized the strategic importance of providing adequate disaster planning to protect the data and facilities needed to sustain operations. Many are implementing rigid backup policies and vital-records protection programs. Also, users are increasingly simulating mock disasters to test the effectiveness of tactical plans devised to minimize network disruptions.

The Chicago Board of Trade, which partially reopened its markets just six hours after it declared a disaster caused by a freak flood, had tested its business recovery plan with partner SunGard Recovery Services, Inc. less than a month before. Standard practice is to do dry runs for emergency responses every three months.

The linchpin of any disaster

(continued on page 40)

By JOHN VACCA

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(continued from page 37)

recovery plan is the services that companies rely on to minimize, or even avoid, service disruptions to end users.

Data processing recovery today is characterized by shell sites, hot and cold sites, and internal backup facilities, as well as a slew of other options. Which of these alternatives users may select will depend on the length of time they can afford to be without service.

Some users take disaster recovery so seriously, they build their own backup net.

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Types of services

There are two broad types of service providers: traditional disaster recovery service providers, such as Comdisco, Inc. and SunGard. Then there are the local and long-distance carriers.

Traditional disaster recovery service providers typically pitch what they call business resumption centers that are equipped with computers, telephones and other equipment needed to resume operations. The user temporarily relocates staff to a business resumption center when a disaster makes it impossible to continue operations at company offices.

Such a move requires a company's incoming calls to be rerouted to the backup work site.

"In our traditional network disaster recovery planning service, we reroute the customer's circuits to the alternate hot-site location," says Paul Kirvan, founder of Paul F. Kirvan & Associates, Inc., a Turnersville, N.J., consultancy. When the user is ready to move back into permanent offices, the circuits are rerouted back to the primary business location. "That's the beauty of a digital network," he says.

Some users take disaster recovery so seriously, they build their own private backup network and don't need a disaster recovery service.

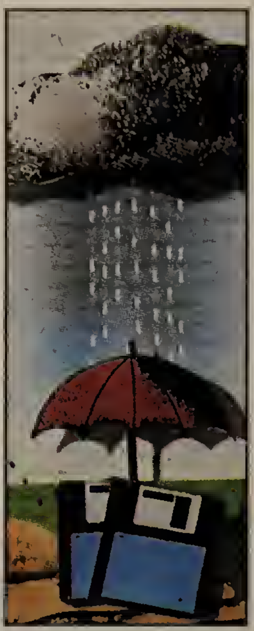
Visa USA, Inc., for instance, decided that its credit card authorization network should never go down. So it built two data centers in the U.S., either of which can take over processing for the other during emergencies. In addition, Visa designed a network in which it uses several public carriers to move data in and out of the data centers. If service from the primary public carrier is lost, the company has a private microwave facility that can route data from the data center to alternate carriers.

The vast majority of users, however, cannot afford to build redundant data centers and invest in private microwave facilities to back up networks. Consequently, users turn to service providers to develop a business recovery plan customized to their needs.

"The provider should be able to develop a program tailored to a customer's short- and long-term requirements," says John Nevola, manager of IBM's Business Recovery Services Center in Franklin Lakes, N.J. "If this means a fully configured network node that can operate as part of an existing network, then that option should be available. The service provider should also have access to emergency bandwidth for network usage."

For the most part, network managers have worked with service providers to draft suitable plans for backing up data center operations in the event of a disaster.

"Now that data centers can be recovered, net managers are beginning to ask about recovery services for business units," says Jeffrey Gardner, vice-president of CHI/COR Information Management, Inc., a Chicago-based disaster recovery services provider.



Network operations oriented around traditional hierarchical computing models in which all data is backed up to the data center can be secured with the range of offerings provided by carriers and other disaster recovery service providers, Gardner says. Although companies are distributing strategic business data down to local sites, they are still largely using centralized backup to coordinate data. As a result, if the data center is involved in a prolonged outage, all sites will feel the impact.

Increasingly, users are looking for service providers to offer them a way to conduct distributed backup to localize the effect of a net outage, he says.

Most of today's traditional disaster recovery service providers redirect customers' private lines to the service provider's backup location so the client's agents can continue to operate. When the primary site is back on-line, the service providers will usually redirect the circuits back from the hot site. The beauty of this setup is that the site can handle multiple disasters and a myriad of different customers at any given time.

"Arrangements are made with local and interexchange carriers to have facilities available," says Kirvan. "The number and type are determined in the initial requirements assessment conducted for each new hot-site subscriber."

Data backup services are perhaps the most crucial service third parties can offer a network manager, and these services come in several forms, such as electronic data vaulting and journaling.

Vaulting is the periodic bulk data transfer of critical files to any off-site location. Journaling is the real-time transmission of record changes to a remote database. Journaling provides for recovery to the point of failure, whereas, by definition, vaulting cannot provide that level of protection for on-line systems. In addition, remote journaling is a software-based solution for recovery to the point of failure for critical databases — where the data is provided to an off-site location by a dedicated network link.

While backup services are crucial to a company's disaster response plan, some third-party providers, such as SunGard, are beginning to offer backup of voice-related services.

Just last month, SunGard announced its Comprehensive Business Recovery Service, which is designed to help users with voice-intensive applications — such as customer service, order processing and telemarketing — rebound quickly from an outage.

Integral to the service is a centralized voice recovery system that enables SunGard to redirect a company's incoming calls to its own automatic call distributors, which can then redirect calls to alternate company sites nationwide, employees' homes or SunGard's own MetroCenters, which are hot sites equipped with telephones and computer banks.

The carrier alternative

While independent service providers such as Comdisco and SunGard provide ample offerings with regard to data backup, public network carriers can also offer a diverse array of services.

"The provider should be able to tailor a program to short- and long-term requirements."

▲▲▲

Today, carriers are pushing high-speed switched services as a means to back up dedicated lines in the event of an outage.

These services are ideal for backup because they provide a user with bandwidth on demand, according to Colleen Stellmach, a marketing representative with Bell Atlantic Network Services, Inc. in Silver Spring, Md.

In addition to being readily available across the country, switched services are inexpensive but reliable for supporting voice and data.

(continued on page 44)

Network disaster recovery services and products

Company	Service/product	Description	Price
Bear Computer Systems, Inc. (818) 341-0403	ResQue	Disk-shadowing software for up-to-the-minute data recovery	Upon request
Bell Atlantic Corp. (301) 236-2210	CommGuard	Service for building contingency plans	Upon request
BMC Software, Inc. (800) 841-2031	Data Vault	Remote disaster recovery software for electronic vaulting	$8,500-$42,000
CHI/COR Information Management, Inc. (312) 322-0150	Total Recovery Planning System	PC-based software for constructing a disaster recovery plan, including starting the project, constructing the service, and expanding, testing and maintaining plans.	Upon request
Comdisco, Inc. (708) 518-5671	Compas	PC-based software for defining, building and maintaining business continuity plans	$9,995-$21,000
Computer Security Consultants, Inc. (203) 431-8720	Recoverypac	PC-based planning software for customizing predefined task lists for business recovery or data processing planning needs	$15,000
CSC CompuSource (919) 460-1234	Hotsite	Disaster recovery contingency services that include fully equipped recovery centers, PC-based planning services and data communications network backup	Upon request
IBM (201) 848-3376	IBM Business Recovery Services	Service for recovering or keeping business operations running	$150 per month and up
Innovation Data Processing, Inc. (201) 890-7300	FDR/ABR Disaster Recovery	Software for recovering a user's direct-access storage device	$10,500/ABR; $5,000/FDR; Perpetual License/ $3,000;CPK/ pricing per site
International Security Technology, Inc. (212) 288-3101	Business Resumption Plan	Disaster recovery service for resumption of business operations	$40,000-$1,000,000
	Criti-Calc	PC-based software that assesses criticality of applications and guides users in selecting disaster recovery and contingency plans	$4,850
NCR Corp. (800) 626-3495	911 Disaster Recovery Services	Service designed for general businesses and financial institutions for developing, maintaining and implementing corporate business recovery plans	$3,000/package; $30/month for hot site; $1,000/month for crises management
Strohl Systems (212) 825-6220	Living Disaster Recovery Planning Systems	Service for building network contingency plans	$7,990-$22,990
SunGard Recovery Services, Inc. (215) 341-8883	Work Group Recovery	Service that restores a work group's ability to execute essential business functions	Upon request
Telecom Reliability Services (919) 544-6333	Disaster Avoidance/Disaster Recovery	Disaster recovery services such as risk analysis, disaster avoidance profile, electrical grounding and protection	Upon request
Vycor Corp. (301) 220-4450	Disaster Recovery Planner	Software for developing and maintaining disaster recovery service plans	$2,250-$9,600
Weyerhaeuser Information Systems, Inc. (206) 924-4200	Weyerhaeuser Recovery Services	Service that provides a hot-site computer backup facility	Upon request

SOURCE: JOHN VACCA, STERLING, VA.

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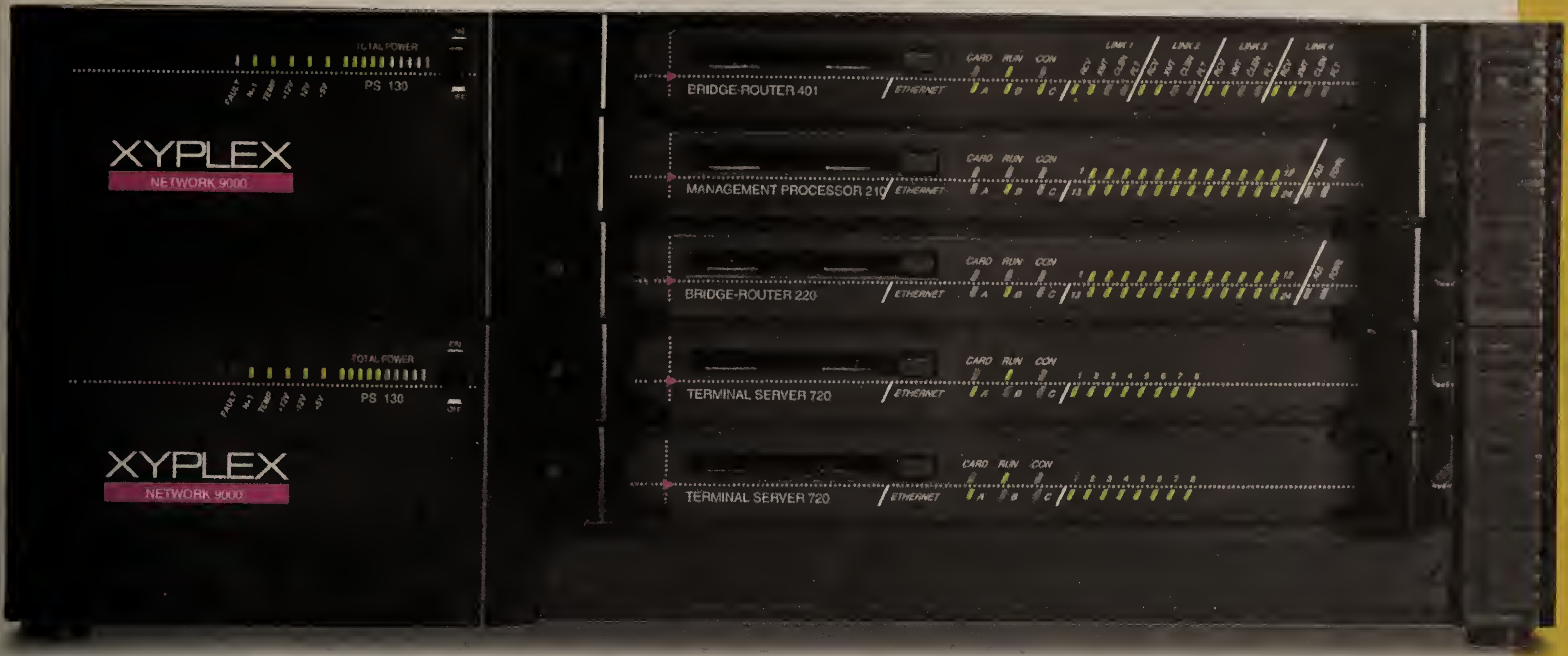

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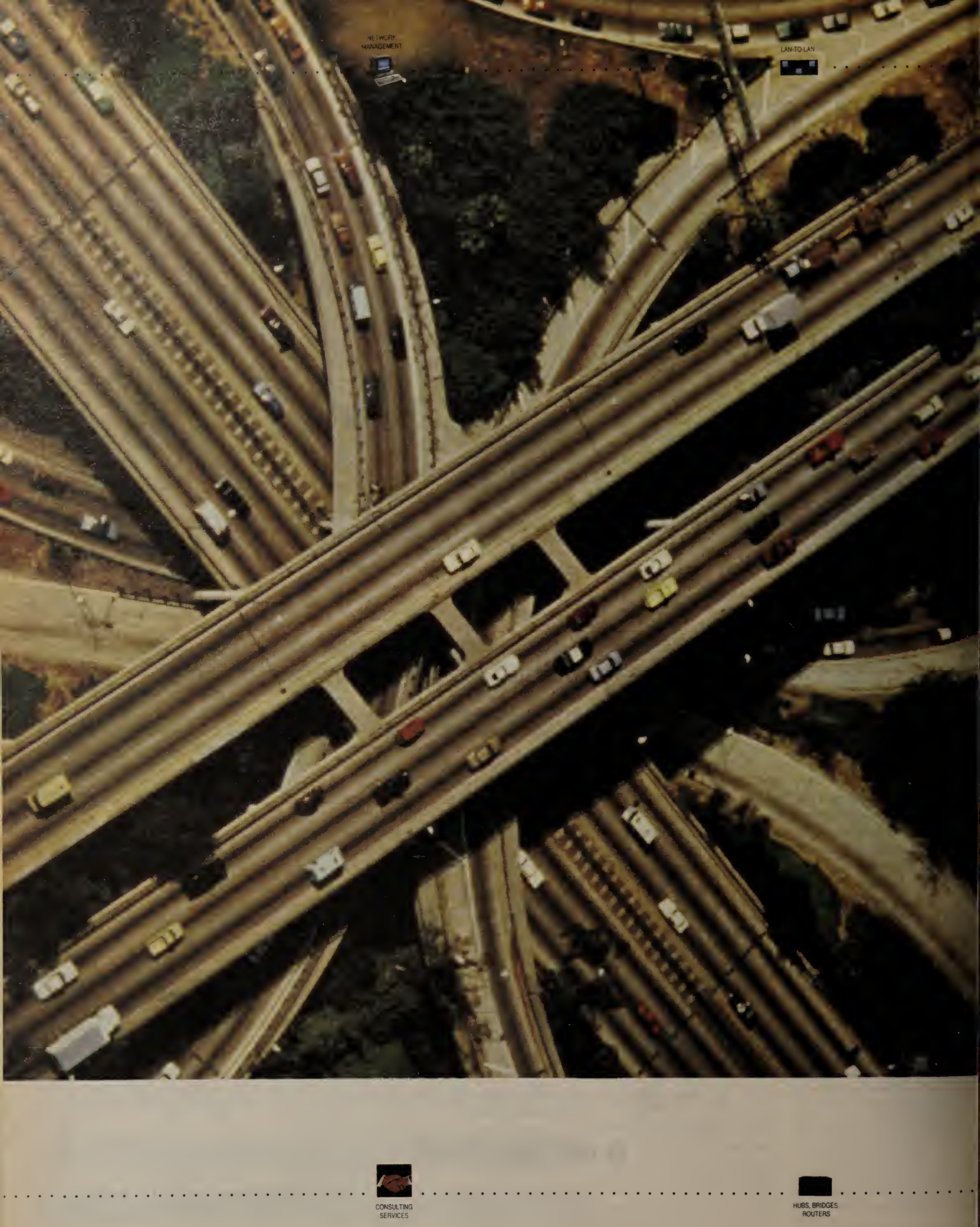

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(continued from page 40)

"Right now, most users depend on basic switched telephone service for backup," Stellmach says. "Services like [switched] 56K/64K and [switched T-1 and fractional T-1] are examples of on-demand emergency facilities."

One challenge faced by carriers is that they are driven by technology and competition to use higher capacity links and larger switching systems.

"This introduces greater single points of failure," says Neslie O'Hare, manager of technical services for Telehouse International Corp. of America, a New York-based provider of backup sites and recovery services. "Carriers must also deal with numerous regulations that limit their service offerings and pricing."

Another issue still up in the air is whether carriers suffering outages will provision services from a rival on behalf of a customer. For example, would AT&T obtain circuits from MCI Communications Corp. for a disaster recovery customer when that firm loses AT&T circuits?

"Traditionally, this is not done," says Tony Curry, engineering programs manager for NEC America, Inc. in Irving, Texas.

However, in New York, the Mayor's Task Force On Disaster Recovery has undertaken a bold initiative to pull together local and long-haul carriers serving that city into a cooperative group to address the need for a mutual aid program.

> "The best form of disaster recovery is diversity of suppliers," says MFS Development's Kozak.
>
> ▲▲▲

Companies including AT&T, The Chase Manhattan Bank, N.A., Goldman Sachs & Co., MCI, Metropolitan Fiber Systems, Inc., New Jersey Bell Telephone Co., New York Telephone Co., Sprint Corp. and the New York City Department of Communications have signed an agreement to cooperate with one another during disasters.

Tabletop exercises are being conducted by the city to simulate disasters and the recovery steps that would be taken to back up a carrier. That effort will likely serve as a model for the federal government as well as other major cities.

Local carriers aren't the only option network managers have when it comes to disaster recovery. Alternative bypass carriers are another option users have to back up the local loop.

Ironically, as more companies rely on telecommunications, the public telecommunications infrastructure continues to decay, leaving companies vulnerable to outages.

In order to protect against a telecommunications disaster, many companies are selecting service from competitive local access carriers. Local bypass carriers, which compete directly with Bell operating companies for dedicated access and local private-line service, offer companies two major disaster protection services — highly secure network service and diversifying communications among multiple local access carriers.

Richard Kozak, president of MFS Development in Oakbrook Terrace, Ill., says users should also consider bypass carriers because "the best form of disaster recovery is diversity of suppliers."

It is inherently risky for a firm to have all of its telecommunications circuits supplied by one carrier, Kozak says.

Once users diversify their carriers, they need to examine the protection afforded by each of the suppliers, he explains. Historically, local exchange carriers have nondiverse, branch-type networks in which lines are interdependent. If a line becomes severed, you lose service.

According to Kozak, users should look for network services that can reroute traffic around failed links.

"From a communications standpoint, you need diversity of suppliers and the ability to transfer service to a supplier unaffected by the disaster," he says. "If you can do that, you have achieved disaster recovery."

Different types of services

The network disaster recovery service market consists of seven distinct classes of services, according to Charles Wood, an independent consultant in Sausalito, Calif. They are: awareness and training; decision support; system access control; physical security for computers; computer operations; backup, recovery and archival storage; and communications security.

In broad terms, the network backup, recovery and archival storage market can be divided into hardware and software offerings, Wood says.

Hardware offerings include the off-site equipment hardware necessary to continue computing operations at business recovery centers, in addition to on-site equipment that helps prevent interruptions in computer network services, he says. Software products cover disaster planning or emergency recovery operations, as well as notification of authorities in the event of an outage.

The thriving market for business recovery centers includes cold sites, which are also known as empty shells. These facilities

Not just a

are computer rooms with the essential power, air-conditioning, physical access control and other support systems but without the actual computer and communications systems.

They serve as a lower cost alternative to hot sites, which provide everything — including computers and network equipment — needed to immediately continue operations. Here, subscribers can use any of the hot-site computers, depending on the demand for their services.

Hot-site networks eliminate one of the major objections to the use of hot-site services: A regional disaster will prevent some local subscribers from using hot-site facilities because the combined need for service will overtax the site. Instead, network links among hot sites allow subscribers to use different hot sites.

To assist with file backup, software is available that aids in automatic network backup.

"Separate network disaster recovery services provide software packages that identify the newly changed files that need to be backed up in what is called an incremental backup," Wood says. "The files that have not been changed need not be backed up."

During the past few years, new software has emerged to alert network managers, as well as fire and police officials, in the event of an emergency, Wood says.

These products include such things as control checklists, report generators and rudimentary database management systems, and can determine application criticality to choose both recovery strategies and related controls and to document network disaster recovery procedures.

Pricing

Users need to be aware that disaster recovery service pricing ranges all over the lot.

If the network service is tariffed by a carrier, the prices will generally include a onetime setup fee, a regular monthly fee for the service's availability and

(continued on page 46)

Weighing the issues of network disaster recovery

Network disaster recovery policies serve but one purpose: to enable users to recover quickly and keep their businesses operating should disaster strike.

However, it takes many steps to make sure users adopt a policy that works. More importantly, it requires time for careful analysis.

Some elements to consider when developing an effective network recovery policy are:

■ **Redundant systems.** In a distributed system, the goal is to eliminate any single point of failure. If a primary component fails, an identical component is poised to carry on the task. If an entire system should fail, a second, identical system is on-line.

"This concept prompts many managers to require that all network servers and workstations come from the same manufacturer and be configured alike," says Cheryl Snapp, vice-president and cofounder of Network Associates, Inc., a consulting firm in Orem, Utah.

System redundancy is especially critical as viruses reach epidemic proportions. "Viruses multiply exponentially in a networked environment," says Michael Light, cofounder of Carolina Business Systems, Inc. in Charleston, S.C. "And the damage they cause is often more expensive to fix since time usually costs more than hardware parts."

■ **Alternative routes.** When there is only one conduit for a network cable, a single problem can bring the entire net to its knees. Wide-area connections are extremely vulnerable, according to Snapp. The temptation is for companies to link Site A to Site B, Site B to Site C, and so on, she says. But by creating a mesh network in which any site can connect to any other, users can route around failed links.

■ **Backup strategies.** Appropriate backup strategies vary widely. In a legal firm, for instance, backing up the system once or several times a day may be sufficient. But in a banking or manufacturing environment, the difference between one or two seconds could affect three or four critical transactions.

The method of backup and the percentage of budget and effort a company decides to expend in this area will depend on how much data it can potentially afford to lose.

■ **Contingency plans.** Network disaster recovery policies should account for every imaginable contingency. Furthermore, the company's preparedness should be tested by at least occasionally enacting a disaster dry run.

■ **People plans.** If a key networking manager suddenly left a company or was incapacitated and a disaster occurred, what steps could other network personnel take?

"Early on, I always worked on the assumption that if something went wrong with the network, I'd be around to take care of it," says Diane Danielle, president of Danielle Associates, Inc., a San Francisco-based network consulting firm. "But you should make sure your policy is set up in such a way that it doesn't depend on the availability of a particular person. That can really change the way you think about network disaster recovery."

—John Vacca

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(continued from page 45)

some type of usage-sensitive fee.

Services that are not tariffed generally are priced on an individual case basis. Disaster recovery firms provide hot-site services for a monthly fee based on the amount of equipment a user needs backed up.

A onetime declaration fee is assessed when a subscriber declares a disaster. An additional monthly recovery fee is assessed on top of the base monthly charge when the subscriber is using the recovery firm's hot-site facility.

The recovery services business is very similar to the insurance business. "Risks are identified," says Anne McCarthy of Comdisco Disaster Recovery Services, Inc. "An actual plan is implemented to protect the business, and a fee, similar to a premium, is paid."

Customers also pay separate fees for declaring a disaster and using the service provider's facilities. The declaration and usage fees are designed to prevent inappropriate usage. Some of these fees may be covered under a firm's insurance contract.

Users may also have to pay a monthly subscription fee based on the configuration they require.

"This fee includes test time and plan assessments," says IBM's Nevola.

Customers can change configurations at any time, as determined by the end of the original subscription period, which could be one, three or five years. Also, disaster recovery usage fees are charged at a daily rate tied to the monthly subscription fee.

Where's the guarantee?

Even with all the fees a user may pay, there's still no guarantee of service when a disaster occurs.

"In a theoretical sense, a regional disaster could provide more recovery requirements than any vendor could handle," Nevola says. "So it behooves prospective clients to examine the depth of any prospective service provider. That is, how many resources can the vendor bring to bear on a multisite regional disaster of immense proportions."

So what do users get for their money? Assuming the backup center isn't already full with other subscribers, a user can have access to the computing hardware, disk, tape, memory and communications spelled out in its contract.

"Critical applications are usually kept in a safe, off-site storage area for delivery to the hot site during a disaster," Kirvan says. "Sometimes these are also kept at the hot site.

"From a network perspective, the subscriber has access to certain transmission services and even a specific amount of bandwidth," he adds. "Access to network termination equipment is also specified in the contract."

> Customers pay separate fees for declaring a disaster and using the service provider's facilities.
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Most network disaster recovery service providers offer customers assistance in the evaluation of the organization's risk and an action plan for reducing that risk.

"The level of support needed and, thus the level of service needed, is driven specifically by the industry in which they are located," Comdisco's McCarthy says.

For example, a large bank governed by federal regulations must have an aggressive recovery program in place. This typ of organization is expected to recover critical business functions, such as funds transfers within a very short time window, typically 6 hours or less. Such a scenario wi result in a costly disaster recovery plan.

Other organizations that do not hav such high recovery requirements will no need the same level of recovery sophistication, and, therefore, their recovery services will be less expensive, she adds.

As users' reliance on data processin grows, so will the importance of networ disaster recovery planning services. Network managers should not lose sight of th fact that recovery of the data center mean that the survival of the business is ensured

However, data center network recover alone is not enough. Perhaps most importantly, successful recovery requires management participation in network disaster recovery planning services. ◼

John Vacca is a free-lance technical writer based in Sterling, Va.

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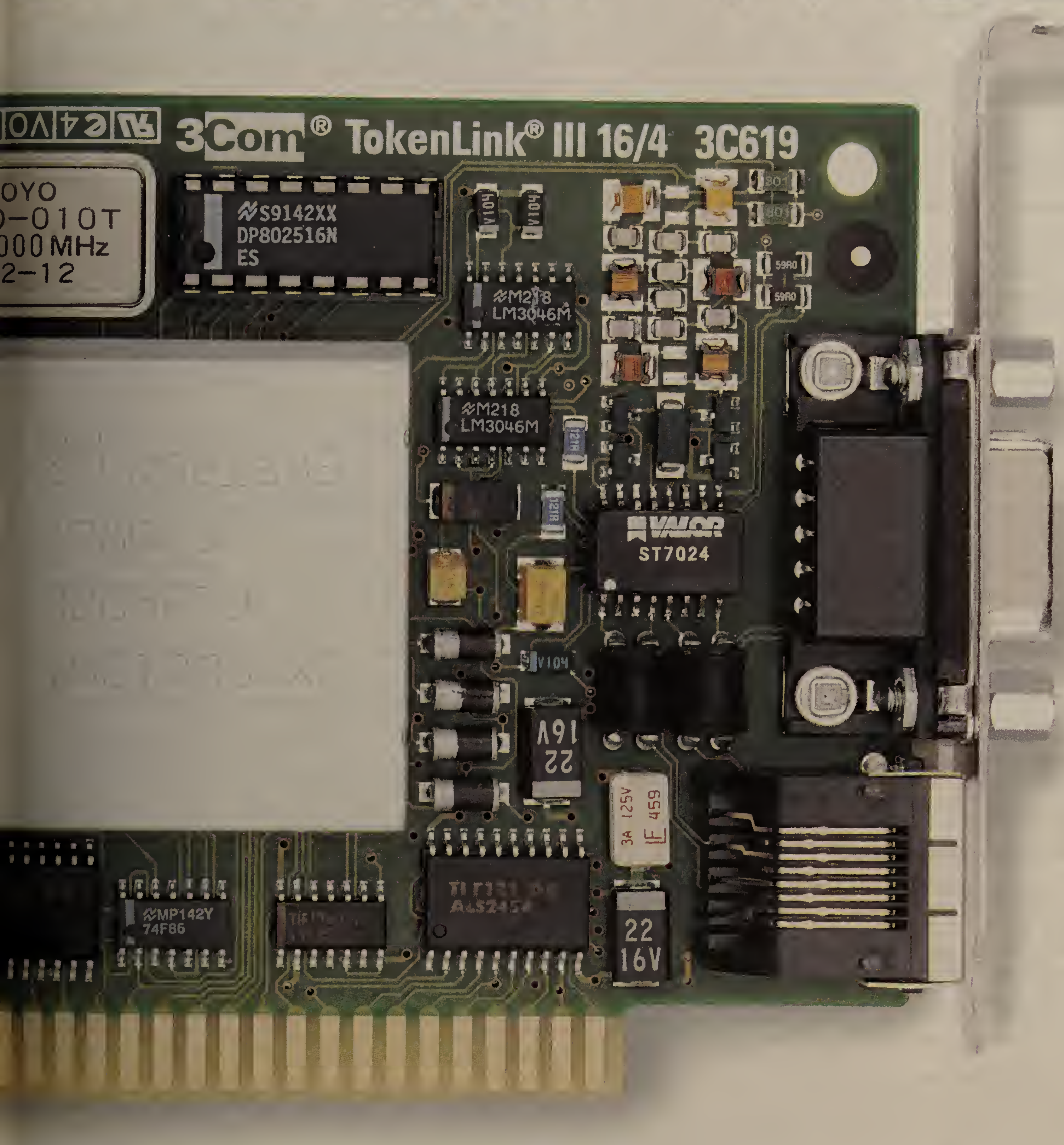

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Telcos to offer uniform services

continued from page 4

based interexchange network for transport to credit card authorization or other information service providers for processing.

By agreeing to provide a consistent set of services across regional carrier boundaries, the carriers hope to make it easier for users with sites across the country to build and manage their networks.

Users will be able to do such things as use the same 950 number in any region and buy DOV or ISDN customer premises equipment with the knowledge that it will work with any local carrier's TSTS offering.

"[Users] with a regional and national focus will benefit because there will be much more uniformity," said Jim Cheshire, a product manager for ISDN Basic Rate Interface at Cincinnati Bell, Inc.

Users will also benefit from improved performance — a key consideration for retailers, for example, who are handling a growing number of credit and debit card transactions.

Most users currently access information service providers via either traditional dial-up lines — which feature an average response time of 25 to 30 seconds per transaction — or faster, more expensive private lines. Using the TSTS offerings, however, average response time should be about 10 seconds or less at roughly dial-up rates.

"Users may see their response times cut by more than half and the cost of their transactions may actually decrease," said Bill Fitzpatrick, a project manager at Ameritech.

"In the past, to get really high performance, you had to have your own private network," said Herbert Manger, director of new services opportunity analysis at Bell Communications Research. Bellcore has coordinated the TSTS effort through its National Initiatives Coordinating Group. "The carriers are now trying to provide access options that provide private-line performance at dial-up rates."

Carriers pledging at the 1992 POS Today trade show here to deploy compatible TSTS offerings included the seven regional Bell holding companies, Cincinnati Bell and Southern New England Telephone Co. Most of the carriers announced specific service plans, as well.

"TSTS [offerings] will be widely available in 40 major metropolitan areas by the third quarter of 1993," Manger said.

The carriers have been discussing the rollout of TSTS for more than a year ("Telcos meet to form POS service rules," *NW*, March 4, 1991).

Retailers conducting credit card authorizations will be the primary target for the services, but banks supporting automated teller machine nets and health care firms that use medical claims processing systems will also be candidates, Ameritech's Fitzpatrick said.

Brokerages, pharmacies and the government — with its electronic benefit payment programs — have also expressed interest in such services, he said.

"The market for industries — aside from retail and POS — might turn out to be equal or greater than the POS market," he said.

Users press for portability delay

continued from page 19

the FCC earlier this month.

Bell Atlantic said it must make upgrades individually to every one of its switches, verify that 800-service messages are being passed properly between the upgraded switches and perform a variety of tests to ensure that 800 traffic is being routed properly.

Prompted by such concerns, the four groups of financial users two weeks ago officially asked the FCC to delay 800 portability until June. They said many technical questions remain unanswered about the upgrades for 800 portability, including which switches will be converted, what type of trunking will be used and how much post-dial delay may be increased.

Additionally, the groups said no one seems to know whether an automated procedure will be in place to convert back to current technology should the new 800 database fail.

"Thus, we face not only the risk of failure of a new technology in the fourth quarter, but the added risk of a fumbled recovery," the groups stated in their filings.

The groups said they are not asking the FCC to delay this requirement indefinitely, but rather want only a short delay so technical issues can be worked out adequately.

They alluded to the major network outages that have plagued local and long-distance carriers over the past two years during the cutover to Signaling System 7.

"The existing deadline is putting pressure on the implementation process, resulting in insufficient attention to critically important details and abbreviated testing of what has shown itself to be a less than foolproof system," the groups said.

Vendors ready variety of wares

continued from page 4

cludes a server card and server software that can be installed in any LAN-attached PC, enabling the device to act as a fax server for other LAN-attached PCs running Calculus' client software.

The product is certified to work with Novell, Inc. NetWare and Artisoft, Inc. LANtastic local nets. LAN EZ-Fax runs under DOS or Microsoft Corp.'s Windows and lets users fax documents via an application's print menu.

New with Version 3.6 is full compatibility with Windows 3.1 and Quarterdeck Office Systems, Inc.'s QEMM memory manager. The new release also comes with "bumpable" technology, meaning users that purchase a low-end eight-user system actually receive a full-featured unlimited-license version containing the higher end features in a dormant state. Thus, when they wish to upgrade, users need only enter a code received from Calculus to activate the desired features.

IWI is also expected to unveil a fax server for NetWare LANs. The Communique Fax Server consists of a 286-, 386- or 486-based PC with a fax card and software. The product can support unlimited users and between one and eight phone lines, and it features optical character recognition that enables it to automatically route incoming faxes to the proper destination.

The server also enables users to send faxes from within their Novell MHS E-mail programs.

Another company, Intelogic Trace, will be offering a group of LAN diagnostic tools at the show. They include ExperTrace, which is software for testing printer cables and ports, and TraceCard, which is a board that plugs into any slot on a workstation, checks for power, runs tests on components and shows results on an LED display.

Ready to debut at NetWorld 92 Dallas

Company	Product	Pricing	Availability
Andrew Corp.	PathWise/7622	$5,595 or $6,495, depending on configuration	Mid-October
	NetLynx Elite	$1,295 to $4,995, depending on configuration	November
	Bridge Manager Elite	$795	Mid-October
Calculus, Inc.	EZ-Fax for Networks Version 3.6	To be determined	Mid-October
Integrated Workstations, Inc.	Communique Fax Server	Ranges from $3,995 for a single-line 286-based version to $19,925 for an 8-line 486-based version	Mid-October
Intelogic Trace, Inc.	ExperTrace	$190	Mid-October
	TraceCard	$375	
	Watch IT	$495 to $1,495, depending on LAN	
	FirsTrace	$495	
	Tech in the Box	$3,995	
Pacific Bell Information Services Group	LANmail Connection Service	To be determined. Will include a flat monthly fee plus usage charges	Mid-October

GRAPHIC BY SUSAN SLATER

Another tool, called Watch IT, is net analysis software that comes bundled with a network adapter specific to the user's LAN, such as Ethernet, Arcnet or token ring. The software lets users observe and trace network traffic problems.

In addition, the firm's FirsTrace software can be loaded by an end user to run low-level diagnostics on a workstation, and its new Tech in the Box is a portable computer and software that can test and provide fault isolation for different network components.

Staff Writer Skip MacAskill contributed to this story.

Europe axes deregulation

continued from page 1

recent European monetary crisis and other signs of disintegrating support for EC unification.

"We were supposed to have a vote in the European Commission on the Services Directive," said Audrey Mandela, vice-president international of Boston-based The Yankee Group during the consulting firm's New York conference on global nets last week.

The 1990 Services Directive said the European markets for data services must be open by January 1993, and the commission had promised to review and possibly expand the directive this year to include voice and network infrastructure as well.

But DG13's stalling indicates liberalization in voice telephony, which accounts for about 90% of the transmission services market, will not come easily.

This spells bad news for users, who have no service choices in most of Europe — the U.K. being the notable exception — because each post, telephone and telegraph administration enjoys monopoly control in its country.

And it's bad news for competitors setting up data networks in Europe, such as AT&T, BT's Syncordia Corp. and a new Dutch-Swedish venture, Unisource N.V., who will not be able to proceed with putting voice traffic on their networks as soon as was expected. Some expressed disappointment over the decision.

"It's bad for PTT Telecom, and it's bad for our customers," said Anton Volk, vice-president of marketing for PTT Telecom Netherlands, which this January will launch with its Swedish partner a network of leased E-1 lines linking the major cities of Germany, the Netherlands, Sweden and the U.K. to carry data traffic.

Mandela said the delay on the voice policy review was prompted by France and Germany, which may be using it as a point of pressure to force the U.K. back into the European monetary union.

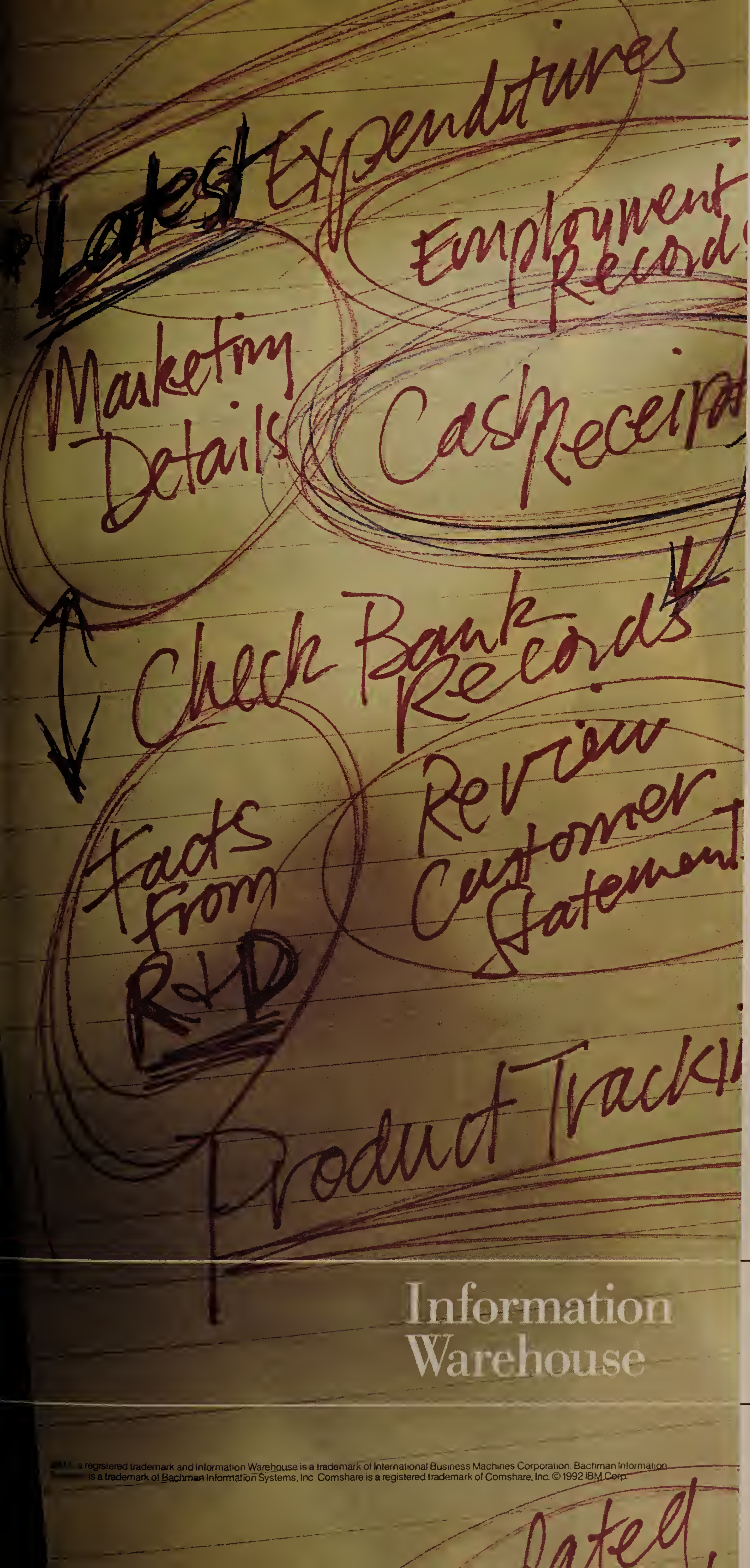
The U.K. bailed out of the system when its currency suffered a sharp decline due to investors' abandoning the pound in favor of the German mark. French, Italian and Swedish currencies have also been under pressure, triggering a European monetary crisis.

Mandela said the Danish rejection of the Maastricht Treaty last spring — which would set the groundwork for the social and economic integration of Europe — and the recent half-hearted support for it shown by the French, have also played a role in the commission's decision.

"They want to pressure the Danes to support Maastricht and get Britain to come back into the EC economic union," Mandela said. The U.K. telecommunications market is already competitive and has long pushed other countries to deregulate as well.

Mandela noted that Sir Leon Brittan, the U.K. commissioner in charge of telecommunications policy, ends his term as the chair of DG13 at the end of the year, and his exit raises more uncertainty for European competition.

Although no new chair has been appointed, Mandela noted that Germany, now the major power of Europe, does not appear to favor liberalization of voice service policy. "Christian Schwarz-Schilling, the German minister of the regulatory body the Bundesministerium, was recently quoted as saying voice telephony should remain a monopoly," Mandela noted.



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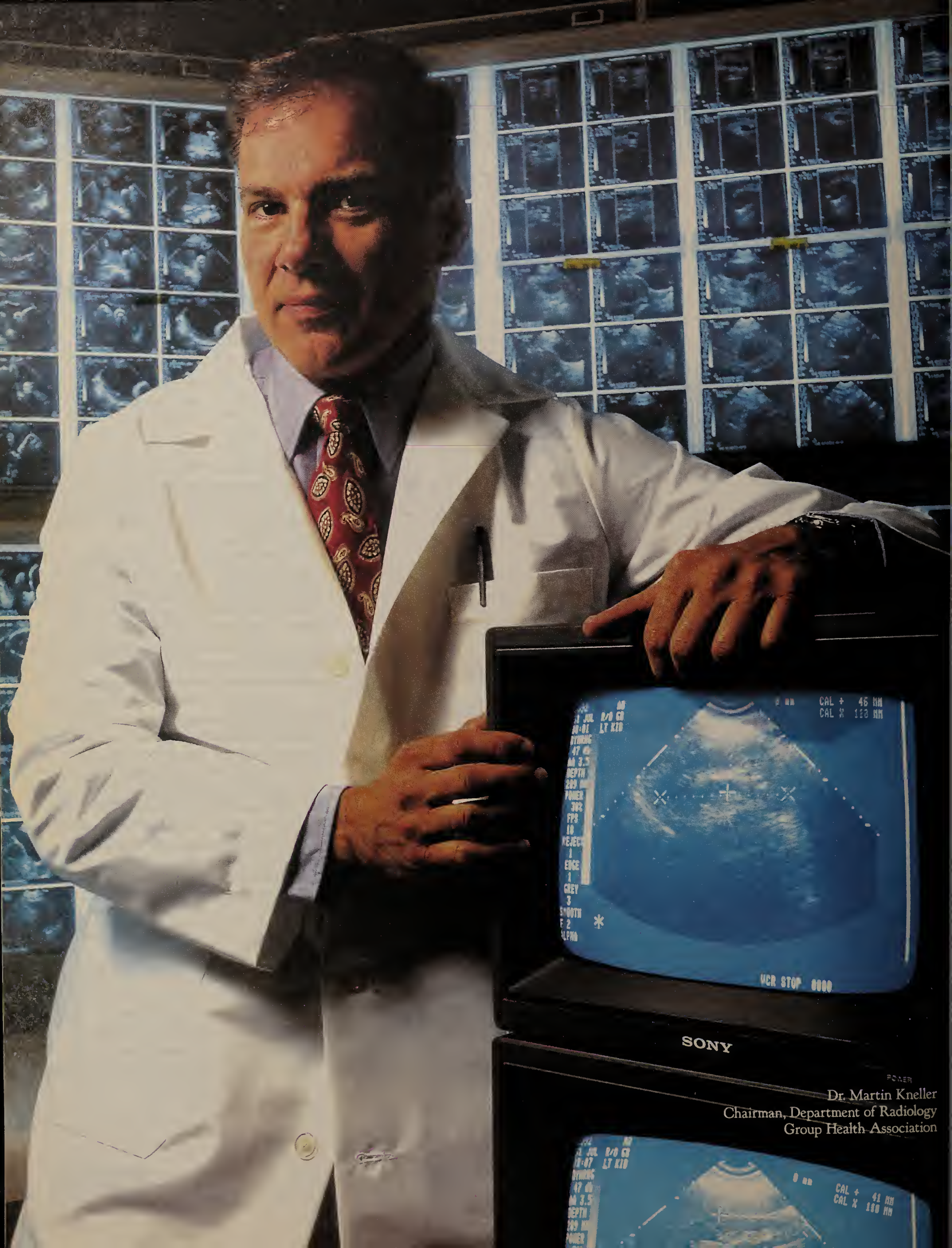

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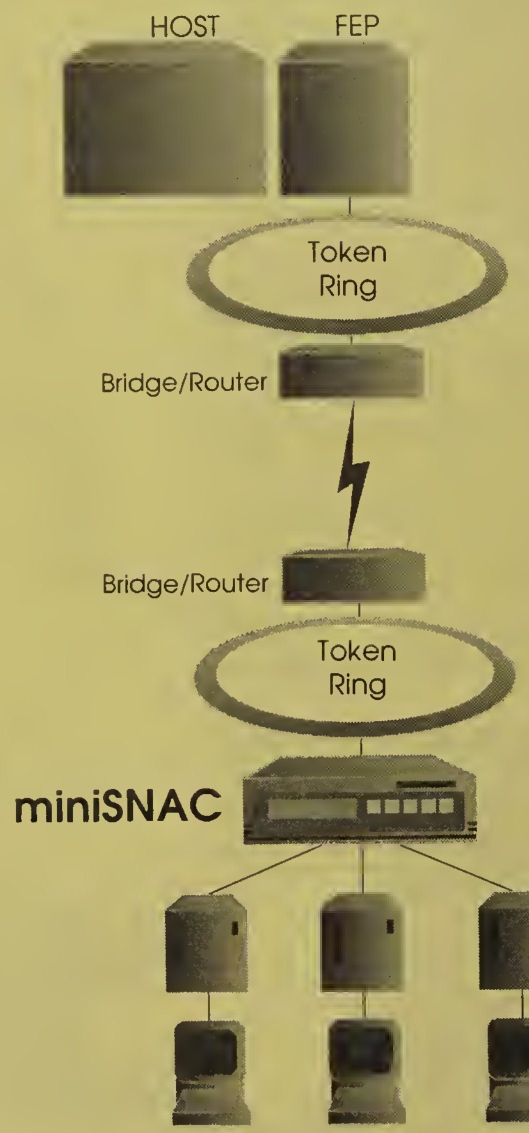

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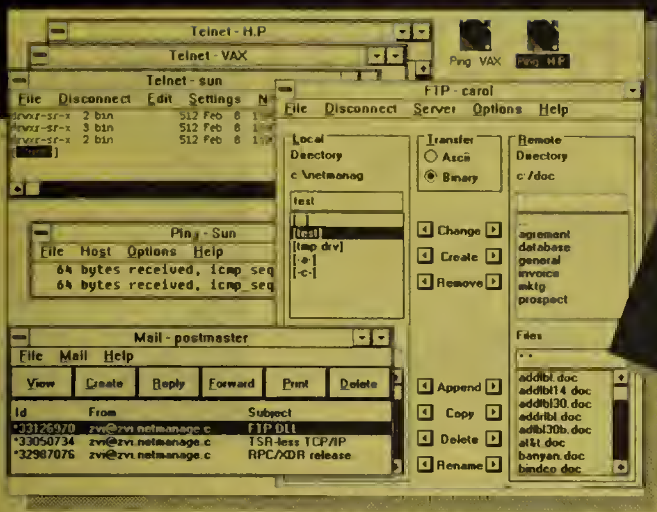

```
drwxr-sr-x  2 bin   512 Feb  8  1
drwxr-sr-x  3 bin   512 Feb  8  1
drwxr-sr-x  2 bin   512 Feb  8  1
```

```
64 bytes received, icmp_seq
64 bytes received, icmp_seq
```

Id	From	Subject
*33126970	zvi@zvi.netmanage.c	FTP DLL
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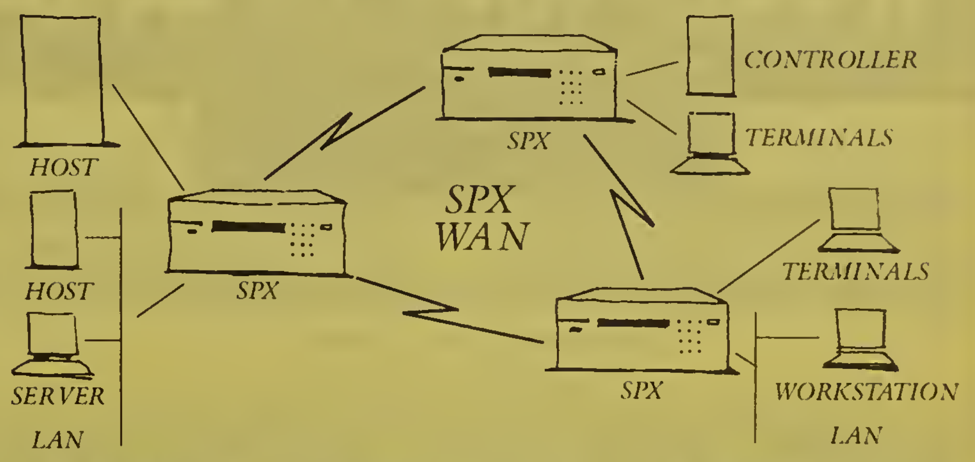

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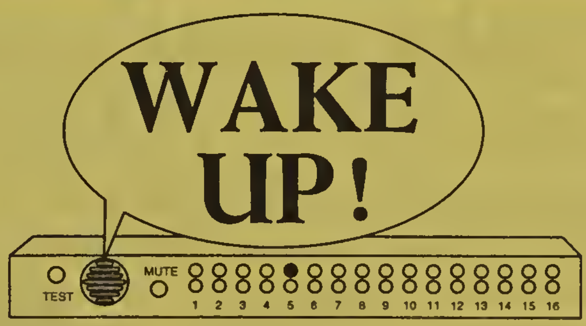

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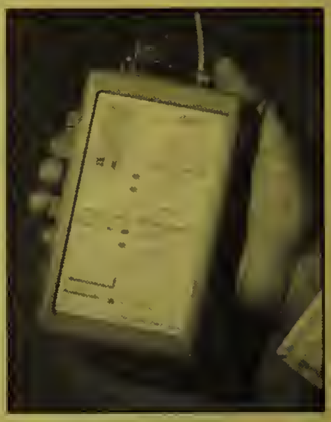

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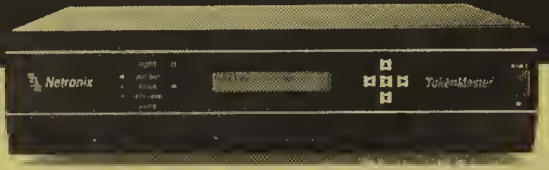

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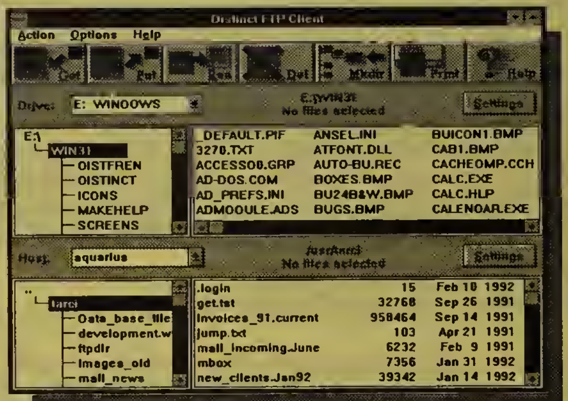

```
E: WINDOWS          E:\WIN31
                    No files selected
E:\
 WIN31        _DEFAULT.PIF     ANSEL.INI       BUICON1.BMP
  DISTFREN    3270.TXT         ATFONT.DLL      CAB1.BMP
  DISTINCT    ACCESSOB.GRP     AUTO-BU.REC     CACHEOMP.CCH
  ICONS       AD-DOS.COM       BOXES.BMP       CALC.EXE
  MAKEHELP    AD_PREFS.INI     BU24B&W.BMP     CALC.HLP
  SCREENS     ADMODULE.ADS     BUGS.BMP        CALENDAR.EXE

aquarius            /usr/karci
                    No files selected
..
 karci        .login                   15   Feb 10 1992
  Data_base_file  get.tst           32768   Sep 26 1991
  development.w   invoices_91.current 958464 Sep 14 1991
  ftpdir          jump.txt            103   Apr 21 1991
  images_old      mail_incoming.June 6232   Feb  9 1991
  mail_news       mbox               7356   Jan 31 1992
                  new_clients.Jan92  39342  Jan 14 1992
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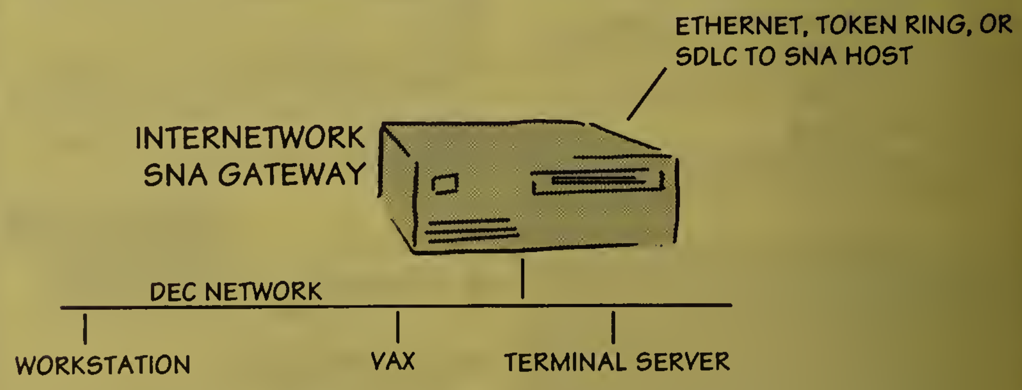

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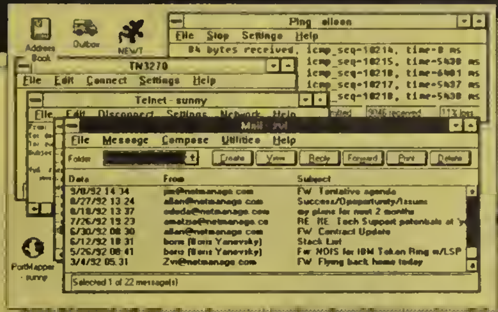

```
84 bytes received, icmp_seq=10214, time=0 ms
                   icmp_seq=10215, time=5430 ms
                   icmp_seq=10218, time=6401 ms
                   icmp_seq=10217, time=5437 ms
                   icmp_seq=10218, time=5430 ms
```

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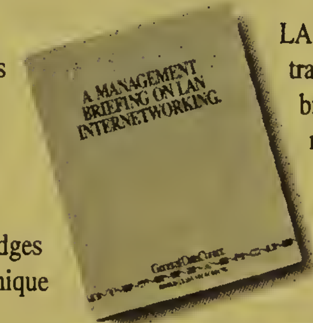

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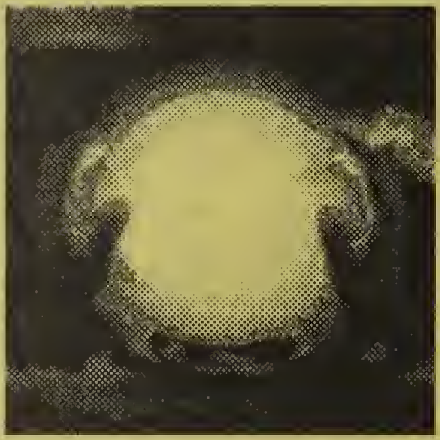

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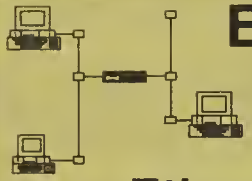

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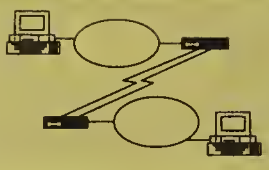

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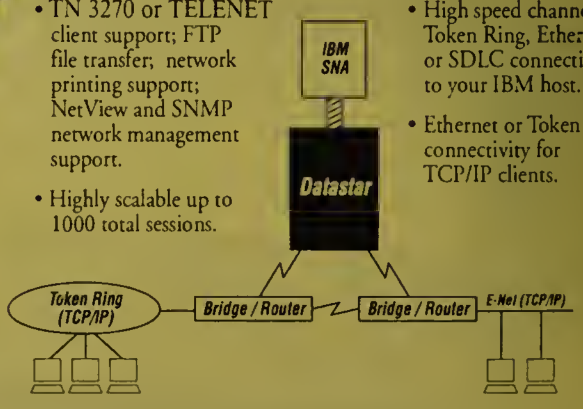

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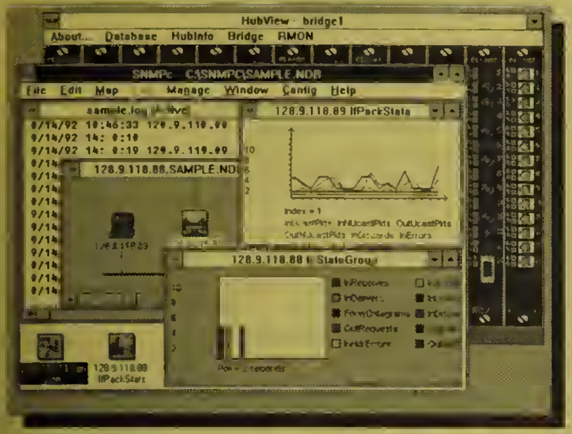

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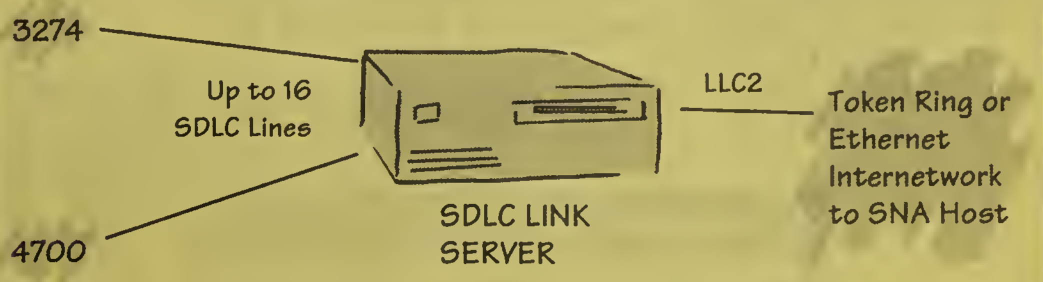

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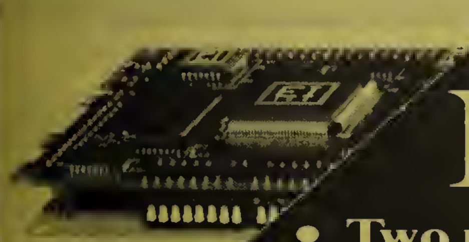

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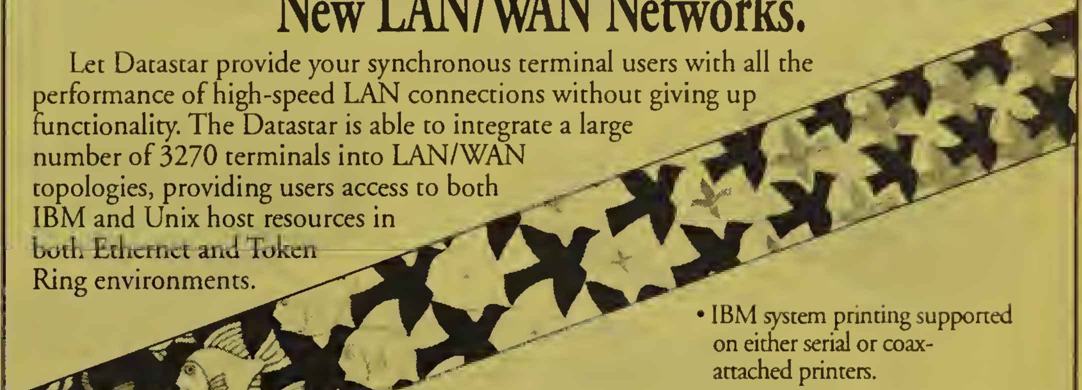

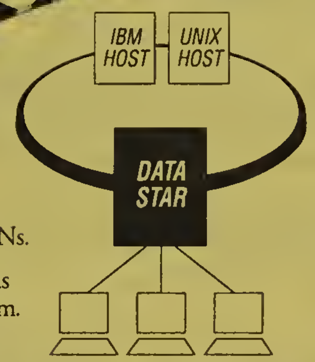

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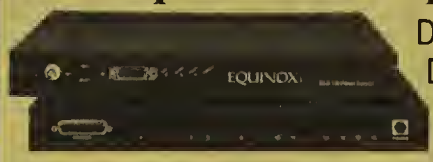

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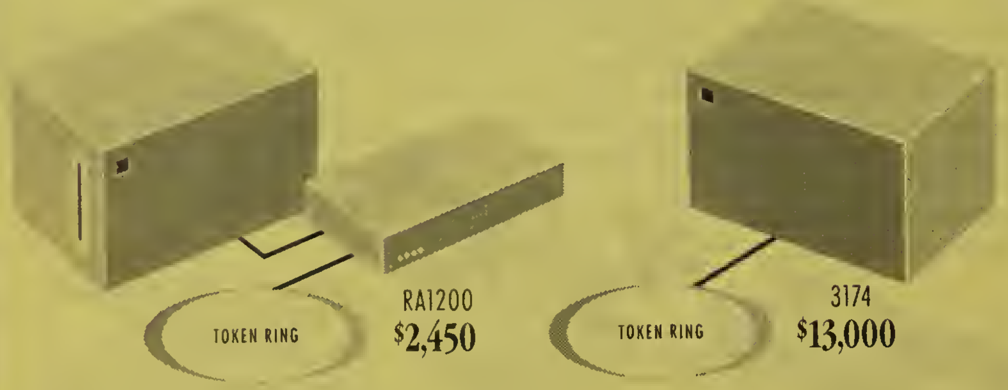

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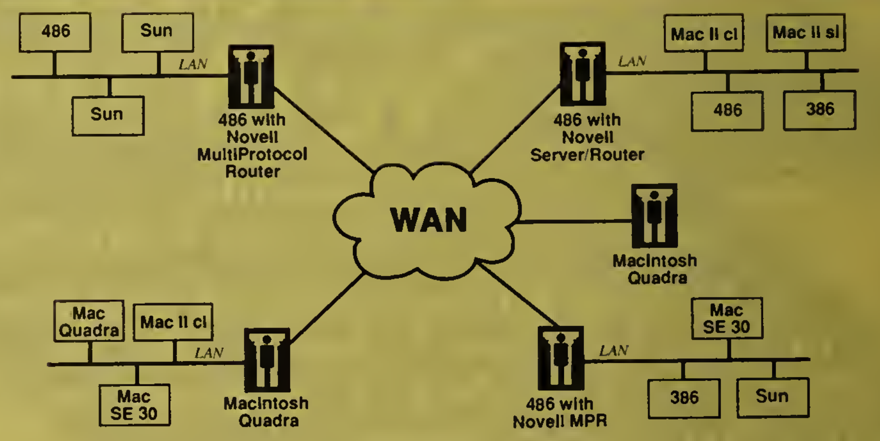

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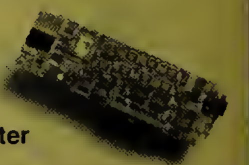

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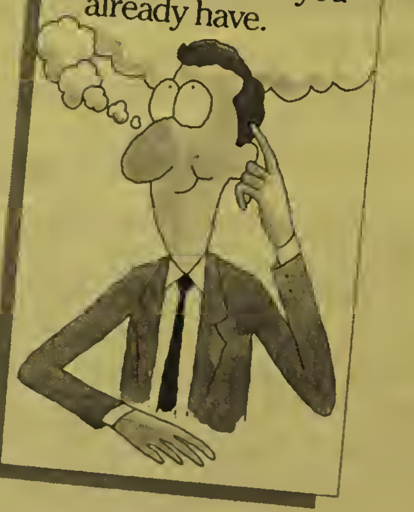

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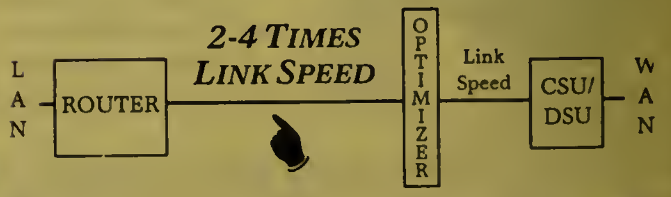

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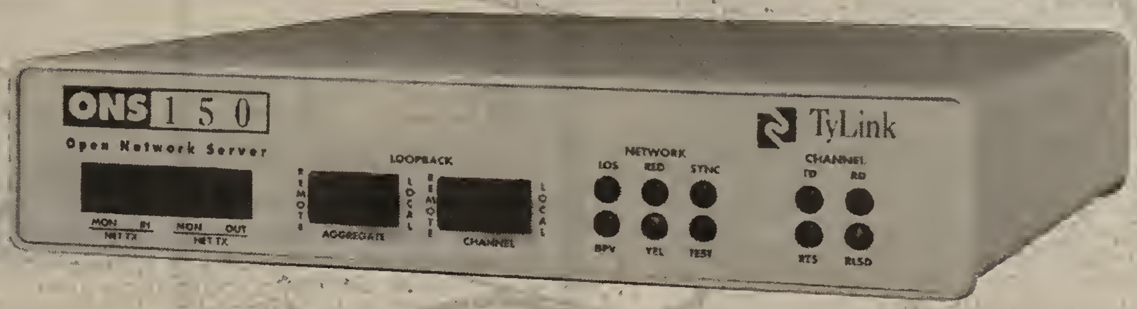

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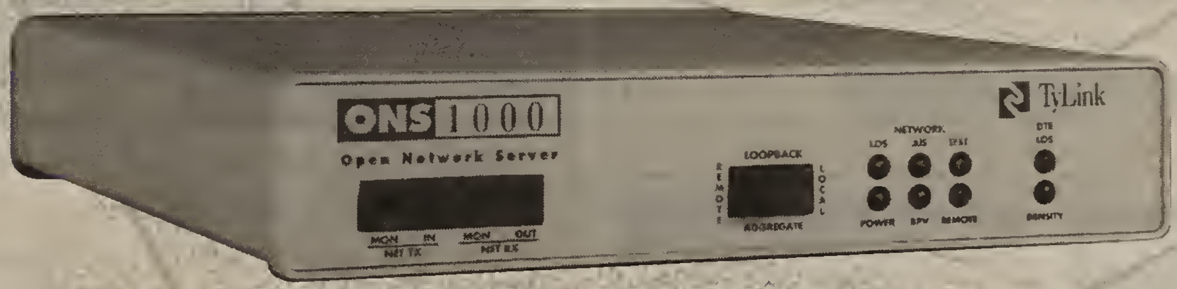

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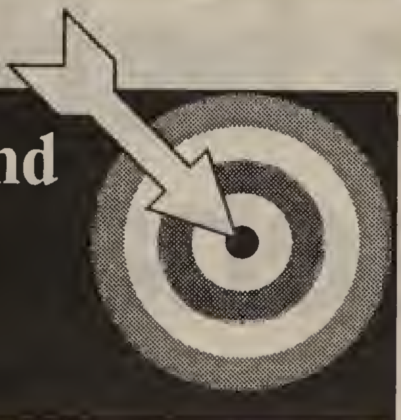

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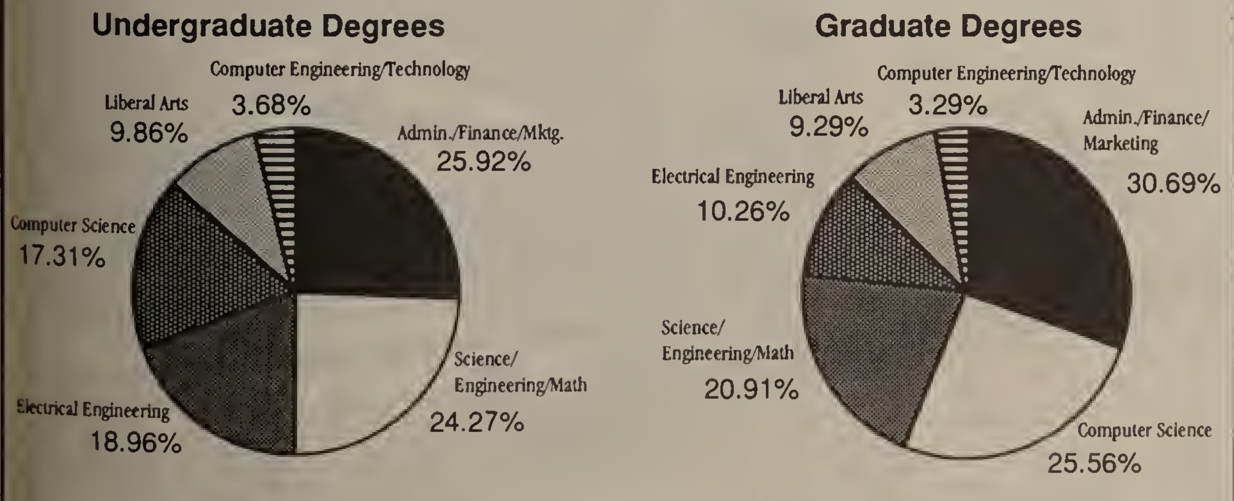

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Start-up targets FDDI speeds for Ethernet

continued from page 1

fications for 10M and 100M bit/sec Ethernet are very similar. Fast Ethernet simply couples existing Ethernet algorithms with increased performance, he said, although he would not provide further technical detail.

He did say that to make up for the electromagnetic radiation and interference over an unshielded cable line — and to reduce the number of collisions — the distance between nodes has to be decreased from 2,500 to 250 meters.

That limitation would cause a problem for users with a bus-type Ethernet topology but should pose no problem for shops using hubs. According to Moses, the average cable run from hub to desktop is not more than 200 meters.

"There are three main reasons this hasn't been done before," Moses said. "First, 10Base-T itself is a fairly new development. Second, until recently, it wasn't proven that you could send traffic at 100M bit/sec over twisted pair.

"Finally, until now, the industry has focused on FDDI for providing high-speed transmission," Moses said. "It has only been a recent realization that FDDI is best deployed as a backbone."

Moses stressed that Grand Junction was announcing only the technology and does not expect to deliver products until late next year. He would not specify what those products will be but said it was possible the technology could result in Ethernet cards that run at either 10M or 100M bit/sec, much like today's 4M/16M bit/sec token-ring cards.

Such cards could be used to upgrade existing products such as modular hubs. Devices such as network analyzers would not have to be modified, however, and software and applications will be able to run unchanged because Fast Ethernet will use the same packet formats as 10M bit/sec Ethernet, Moses said.

Other vendors did not doubt that running 100M bit/sec Ethernet is possible.

"We've looked at this whole area ourselves, and it can be done for sure," said John McElroy, vice-president of strategic marketing and development at National Semiconductor Corp.

In many Ethernet installations, the demand for greater bandwidth is being met by standards such as the Fiber Distributed Data Interface or, in the future, Asynchronous Transfer Mode (ATM). But these technologies have their drawbacks, Moses said.

"FDDI, although ten times as fast as Ethernet, is also roughly ten times more expensive," and more complex, he said.

ATM, besides being quite a way from widespread delivery, is also a completely different and likely expensive technology, Moses said.

The most likely competitor to Fast Ethernet is the emerging specification for FDDI over copper cabling, or CDDI. Although CDDI is likely to cost less than FDDI, Moses said it is still a different technology and will require new training on both the vendor and user sides. ◘

IBM's CPI-C license fee now history

continued from page 4

less, it made some vendors unwilling to commit to it.

"Developers couldn't just pick up the specifications and implement CPI-C without IBM's permission; now they can," said Atul Kapoor, a principal with Kaptronix, Inc., a consultancy in Haworth, N.J.

Other observers said IBM would have had no choice but to let vendors have CPI-C for free because the X/Open consortium, which began incorporating CPI-C into its Common Applications Environment (CAE) in 1990, is already giving it away.

IBM said it removed the CPI-C fee because it wanted to make it as easy as possible for software developers to develop CPI-C applications. The CPI-C licensing announcement could also mean IBM is reevaluating its hard-line stance on licensing fees, maybe even the $400,000-plus royalty fees for its APPN license, analysts said. IBM has taken a beating from users and vendors on its APPN licensing strategy.

"The APPN licensing fees have caused a great debate within IBM. IBM executives don't want APPN licensing fees to hold up its implementation, so they will fix the problem soon," said an analyst who requested anonymity.

An IBM spokeswoman said the firm wants to make it as easy as possible to do business with IBM, but the CPI-C announcement does not reflect a change in APPN licensing. However, Kapoor said, IBM is clearly thinking about its APPN licensing because it wants to get third-party software developers moving ahead with APPN development. ◘

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Users rail against proposed services tax

continued from page 2

mation Technology Association of America, International Communications Association, New York Clearing House Association and Telecommunications Industry Association.

"The tax discriminates against individuals and businesses that rely heavily on telephone service by arbitrarily increasing their costs of doing business," the groups stated in their filing.

Although the IRS would not release figures on the amount it might collect in taxes by including new services, it would likely be in the hundreds of millions of dollars.

The telecommunications industry is projected to generate about $170 billion in revenue this year, according to the Department of Commerce. That figure includes some services that will remain exempt from the tax, but a 3% tax on just one-third of that amount would generate more than $1 billion.

According to the groups' filing, throughout history, the excise tax has been a vehicle of convenience rather than a tool for legitimate public interests. The tax was originally imposed 100 years ago as a temporary measure to raise revenue for the Spanish-American War. It was scheduled to be removed many times in the ensuing century, but Congress finally made the tax permanent in 1990.

"The excise tax on telecommunications services continues to be wrong in principle, unfair to communications customers and contrary to the public policy goal of universal telephone service nationwide," the groups stated.

It would be even more unfair to suddenly include a new group of services under the excise tax, they argued.

Currently, private-line services are exempt from the excise tax. However, the definition of services falling into this category is ill-defined. The IRS is evaluating whether new services — and even carrier transmission facilities such as fiber-optic links — might fall under this exemption.

The IRS gives little guidance as to what could be taxed. What is known, the groups stated, is that the IRS issued a limited decision, known as a letter ruling, that said electronic mail systems and electronic gateways would be exempt from the tax.

But due to the wide-ranging examination the IRS is conducting and the lack of clarity about exempted services, it is possible that the tax could be expanded to include such public network-based services as Integrated Services Digital Network, frame relay, Switched Multimegabit Data Service and packet-switched services. Virtual networks could also be included.

But even if the IRS does not explicitly expand its list of taxable services, it could still tax new services indirectly by taxing transmission facilities.

"Local and toll telephone services already utilize a variety of transmission methods such as microwave, fiber-optic and satellite and, therefore, are already taxed," the groups said. "Subjecting all telecommunications services that utilize these transmission methods to the tax would sweep in many services that are outside the scope of the relevant tax code."

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Artel, Kalpana intro work group switches

continued from page 4

feature that allows it to automatically learn the locations of all devices on the network.

Available next month, StarBridge Turbo is priced at $7,200, or $900 per port.

Also geared to the work group environment but using a switching matrix-based architecture, Kalpana's EPS-500 is an unmanaged, five-port 10Base-T switch that can support as many as five Ethernet segments.

With its switching capacity of 50M bit/sec, the switch can be used within a bandwidth-intensive work group, supporting two simultaneous conversations of 10M bit/sec each.

During normal operation, the EPS-500 has a packet delay of no more than 40 microseconds. That low latency allows packets to be forwarded between segments 20 times faster than with conventional store-and-forward bridges, according to Kalpana. The EPS-500 also has an autodiscovery feature that automatically learns and keeps track of as many as 4,000 node addresses.

The switch also comes in a managed version — the EPS-500SNMP — that supports SNMP and MIB II.

The EPS-500, which is available now, is priced at $3,500, or $700 per port. It can be upgraded to the SNMP version via software for $600. That software package will be available next month.

Pricing for the EPS-500SNMP, also available now, is $4,000, or $800 per port.

Microsoft plots desktop move

continued from page 1

group networking for users while giving them connections to any corporate servers and data."

Analysts at the briefing said the plans have merit. "It's a compelling story for Windows users," said Jamie Lewis, vice-president of The Burton Group, a consulting firm in Salt Lake City. "Microsoft is providing a foundation for deploying applications and services that is both open and modular, although not all the pieces are in place."

PHOTO ©1989 BARRY KAPLAN

Steve Ballmer

The focus of Microsoft's new strategy centers around its new Windows for Workgroups, a peer-to-peer network version of Windows, and its set of open interfaces for messaging, data access and networking specified in the firm's existing Windows Open Services Architecture (WOSA).

"Through WOSA, we're providing the flexibility of a building-block approach," said Steve Ballmer, an executive vice-president at Microsoft.

Windows for Workgroups will allow users to share information by providing basic file and print sharing, electronic mail and group scheduling capabilities.

It will also have net support for Microsoft's Dynamic Data Exchange protocol, enabling users to link applications on different computers.

Finally, Windows for Workgroups will allow users to directly access file servers, such as LAN Manager or Novell, Inc.'s NetWare. The product is due to be formally announced and available later this month. These features will be included in Windows NT when it ships in next year.

"We want Windows to be the best network client, tying multiple servers together and providing work group capabilities from a single PC," said Mike Maples, a Microsoft executive vice-president.

PHOTO ©1989 BARRY KAPLAN

Mike Maples

Microsoft also demonstrated its unannounced Access product, which can be used as a stand-alone database, a multiuser database or a front-end client tool used to query database servers. Access is expected in 1993.

As part of the demonstrations, Microsoft showed many add-on capabilities to existing products, such as Microsoft Mail or its Excel spreadsheet. These enhancements range from macros consolidating work group-related functions to providing enterprise extensions in Excel.

Gates said all these work group or enterprise-related enhancements in existing products would be made available to users for a small charge or at no cost.

Also, Microsoft showed for the first time systems management software that would work with IBM's NetView and the Simple Network Management Protocol. It will include tools for managing hardware and software inventory, software distribution, software installation and license control.

Microsoft also said it was building a new X.400 messaging server on top of Windows NT. This product, code-named Hermes, is expected in the second half of 1993. ◘

U.K. paves way to open market

continued from page 4

A new TeleChoice report predicts that the amount of switched business traffic between the major industrialized nations carried by international resellers will skyrocket from 1% by year end to 40% within five years.

"Between certain countries, such as the U.S. and the U.K., the amount of business traffic carried by international private-line resellers could be as high as 60% five years from now," Briere said.

Those predictions are predicated on the approval of bilateral agreements between the U.S. and other countries.

Overseas governments with simple resale provisions have indicated they will approve such agreements with the U.S. only if "reciprocity" exists, which is when competitive market provisions in the U.S. match those in their own country.

The U.S. to date has been seen as nonreciprocating. Thus, carriers such as BT and Cable & Wireless PLC are prevented from using simple resale with the U.S.

But that could change if the FCC decides this week to abolish or minimize dominant carrier regulation for foreign-owned carriers. Analysts said the agency will do just that, which would open the floodgates to simple resale of switched voice services into and out of the U.S.

Meanwhile, the process of licensing resellers to sell network capacity between here and Canada, Australia and Sweden has already begun.

Rochester, N.Y.-based ACC Corp. last week announced that its ACC Long Distance UK, Ltd. subsidiary is the first to be granted a license for international simple resale of switched voice services. ACC Long Distance UK was formed in May to help its parent expand its long-haul resale operations to the U.K. ACC already has a Canadian resale operation.

ACC Long Distance UK's initial plans call for service between London and Toronto. Future links to North America will be established when DTI allows simple resale to the U.S.

Although users expressed interest in switched voice resold over private lines, they said resellers have a tough road to hoe.

"There's definitely user demand for these services," said Reuben Lantto, director of international communications with Cargill, Inc. in Minneapolis. "But resellers are going to have to do a hell of a marketing job." ◘

Rollout lets LANS share links

continued from page 4

The Florida Division of Communications operates a statewide network called SunCom SNA Transport Service that comprises eight IBM 3745 front-end processors connected to IBM mainframes at the state capitol.

For branch office configurations, NetWare for SAA and NetWare SNA Links can run alongside file and print services on a single NetWare Version 3.11 server. This provides users with local file and print services and access to remote 3270 applications and LANs. Both work with Synchronous Data Link Control or token-ring connections and support concurrent LAN-to-LAN and LAN-to-host traffic over the same physical connection.

Network administrators can use NetWare SNA Links to connect to remote NetWare servers across the SNA net and perform remote network management from a central location using standard NetWare utilities and management products.

NetWare SNA links is available now in one-, 20- and 60-server packages and costs $1,250, $18,000 and $40,000, respectively. ◘

Novell users get security threat

continued from page 1

bypass Novell's fix, threatening NetWare LANs again.

And Novell customers are not the only ones at risk. "[Microsoft] LAN Manager programmers assured me the same trick can be used in a LAN Manager environment," said one source who requested anonymity.

Responding to the new threat, Jan Neumann, executive vice-president of the NetWare Systems Group at Novell, based here, said the company has key people working on plugging the security hole. "We are taking this very seriously," he said, adding that a statement is expected to be issued today detailing the problem and Novell's solution.

Microsoft officials said they were not familiar with any security threats to LAN Manager.

In a statement issued with the enhancements, Novell said, "The security threat, proven in a Netherlands academic laboratory, is not currently found in commercial environments . . . However, Novell considers any threat t network security to be serious.

"Because this security threat affects other network operating systems, it is an industrywide problem," the statement continued. "Novell is willing to work closely with other companies t ensure that networks are as secure as possible."

The program is said to enabl a user — even one with a temporary or guest account — to review all active users on the LAN and adopt the widest access right of any user.

According to sources, the program has three limitations. First the user has to have an accoun on the network, minimizing th risk from outsiders. Also, the program can only transfer right from users currently logged on t the network. Finally, the program cannot provide acces rights across a LAN internet; only works within a single ne work segment.

Users expressed their co cern. Tracy Mitchell, networ support specialist at WHDH-TV i Boston, said the infiltration her company's NetWare networ "would be disastrous."

"We run many mission-crit cal applications," she said. "A s curity [threat] could be a proble for any of our departments."

Other observers tried to p the risk into perspective.

"Everything can be broke into — that's reality," said Ru sell Frye, president of Frye Cor puter Systems, Inc., a NetWa third-party developer based Boston. "Physical access co trols are the only sure method fully protecting your system." i

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Client/server gets CASE expertise

continued from page 1

host applications.

"Customers want the best of both worlds," said Elise Soyza, director of marketing at LBMS in Houston. "They want to develop client/server applications within a structured environment, but they also want the flexibility and ease of use offered by graphical front-end tools."

The announcements, which were made in conjunction with Digital Consulting, Inc.'s CASE World Conference and Exposition here last week, came as no surprise to analysts.

"It's a trickle now, but there will soon be a flood of deals between CASE and client/server tool vendors," said Neal Hill, a senior analyst at Forrester Research, Inc. in Cambridge, Mass.

LBMS and Bachman considered developing front-end tools but decided to ally with Powersoft, which makes one of the leading Windows-based client/server development systems.

"We didn't want to reinvent the wheel," Soyza said.

LBMS' interface links its Systems Engineer CASE tool directly to PowerBuilder 2.0, supporting a two-way flow of data between the products. The SE/Open for PowerBuilder interface is available now at $10,000 per server.

The interface lets developers store PowerBuilder-generated objects — such as windows, pull-down menus and other graphical user interface controls — within Systems Engineer's local-area network-based repository. PowerBuilder objects can be validated as part of the overall application design and reused in other applications. Data items in the repository can be exported into PowerBuilder to become such things as application fields or menus.

Bachman plans to roll out an interface between its Bachman/Analyst CASE tool and PowerBuilder sometime next year. Bachman customers will be able to use existing enterprise models as the basis for developing Windows-based client/server applications using PowerBuilder.

Users at CASE World said integration is a step in the right direction but it still does not meet all their needs. Most said they would like vendors to adhere to a common interface standard so that any CASE tool can work with any client/server tool.

"We would like the flexibility to choose whatever CASE and client/server tools we like best and not have to worry about whether they can be fully integrated," said Carl Silkey, systems consultant at Paul Revere Insurance Group in Worcester, Mass.

Some believe the marriage between CASE and client/server tools is ironic. Client/server tools, which enable users to build applications quickly and easily, grew out of discontent with the drawn-out process of building host applications using a methodology and CASE tools.

"Client/server tools are a reaction against the complexity of CASE solutions," said Pieter Mimno, president of Technology Insight, Inc., a consulting firm specializing in CASE and software development.

While many CASE vendors are expected to pursue alliances with client/server tool vendors, some of the bigger players, such as Texas Instruments, Inc. and Andersen Consulting, will try to build client/server capabilities into their existing CASE tools.

At CASE World, for example, TI demonstrated a new version of its Information Engineering Facility (IEF) that enables users to build client/server applications for Windows, OS/2 Presentation Manager and Motif environments. IEF Version 5.2 is in beta test and is scheduled to be available mid-1993. Also, TI and Sybase, Inc. are expected to announce this week an extension to IEF that will create data models for Sybase's relational database.

Intersolv, Inc. of Rockville, Md., demonstrated at CASE World a tool that generates source code needed to run applications across OS/2 Presentation Manager clients and OS/2 or IBM MVS/CICS servers. It automatically splits application code between clients and servers.

The product is tightly integrated with Intersolv's Excelerator CASE tool and supports two standard interfaces — the IEEE's CASE Data Interchange Format and IBM's External Source Format — that allow other vendors to integrate their CASE tools with it.

Six int'l carriers to weave web

continued from page 2

Stark, senior vice-president of AT&T's International Operations Division. "We'll also be able to give customers the extra capacity they need, when they need it."

Analysts agreed.

"This is a progressive move to deal with outages on international circuits, which is possibly the biggest problem facing companies with global networks," said Daniel Briere, president of TeleChoice, Inc., a Montclair, N.J., consultancy. "Outages are catastrophic for users because carriers rarely have adequate backup facilities."

User reaction

Users expressed strong interest in the GNP project.

"If the carriers use the network to provide more reliable service and don't charge for the value added, it would be a big benefit," said Jeff Price, manager of voice and video transmission services for Hewlett-Packard Co. in Palo Alto, Calif. "But if they charge for the increased reliability, we'd have to measure the value before making a decision."

HP currently sends international traffic over physically separate submarine cables so an outage on one cable would not be catastrophic.

John Mall, GNP project manager for AT&T, said the carrier has not decided if the diverse routing will be a standard feature of international services or an option with an associated charge.

> "Outages are catastrophic for users because carriers rarely have adequate backup."
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The DACS in the GNP network will be centrally controlled from a dedicated network management center in a city to be determined. There will be a backup center, as well. Special software programming and related equipment in the center will allow the reconfiguration of 2M bit/sec chunks of bandwidth on the shared net. The speed of the network has not yet been decided.

The DACS and management systems for GNP are being developed to operate with current transmission systems as well as the Synchronous Optical Network (SONET) fiber-based systems that will prevail in networks beginning in the mid-1990s.

Stark said AT&T Bell Laboratories is working with the carriers to develop technical specifications for the switching and transmission systems that will be used in the GNP network. The carriers will soon select vendors to provide the network's equipment, hardware and software elements.

Participation in GNP may expand to include other countries' carriers, extending the global reach of the GNP network. A source close to the project said GNP members are actively recruiting several foreign carriers for the effort but declined to name them.

Novell unwraps distribution plan

continued from page 2

nance of applications and data throughout the network, obviating the need for administrators or end users to manually install software on each node.

When a user logs on to the network, the server — or Network Navigator portion — will automatically check to ensure that the node has the latest software. If it does not, the system will automatically download the correct version. The earlier release of the Annatek product required an MVS host to download software and was not an option for many local-area network sites.

> "People definitely have been pounding down the doors for this type of thing, especially in larger shops," Cheryl Currid said.
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In addition, the previous product was not NetWare-aware. For example, the new product has the ability to use the NetWare bindery to generate distribution lists or automatically install the client portions of the package itself.

The product, available now, also supports unattended distribution, letting an administrator program the system to do upgrades during the evening, for example.

The second part of the ESD strategy calls for the release of an NLM version of Network Navigator DOS-LAN Distributor, according to Barbara Goldworm, product-line manager at Novell's NetWare Systems Group in Boulder. The NLM version, she said, will include additional management functions, although she would not be more specific.

Novell will also release application program interfaces to let third-party vendors build applications to take advantage of the NLM's capabilities. For example, a third-party vendor could write a program that ensures customers are not exceeding their software licensing limits.

Finally, Novell will tie Network Navigator DOS-LAN Distributor into its NMS, although the company would not be more specific on how the two would work together. Goldworm would not say when Novell will offer the NLM or integrate it with NMS.

Although the ESD strategy is only in its formulative stage, analysts and users were pleased to see Novell addressing the software distribution problem.

"This is essential in managing LANs," said NetWare user Rick Hencken, manager of PC/LAN application development at CB Commercial Information Technology.

"People definitely have been pounding down the doors for this type of thing, especially in larger shops where the administrator has to load software on every Tom, Dick and Harry's hard drive," said Cheryl Currid, president of Currid & Co., a Houston-based consulting firm.

But some observers wondered if the cost — $1,000 for a five-node version and $50,000 for a 1,000-node version — is too high. "Good Lord," said one third-party developer who requested anonymity. "I thought this was a great idea until I heard the price. This price may be competitive for a mainframe product, but $200 a node is just too much."

Currid added, "The cure is probably worth the price, but people don't like to spend more than $99 a seat for any product."

NETWORK WORLD

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